

## Chapter 4

### Description of Analyses

Bases were analyzed on the basis of all eight selection criteria. For each criterion, a number of subelements were developed. All bases were evaluated under common subelements for Criteria II-VIII. Under Criterion I, individual subelements were developed to assist in the evaluation of each mission type. For example, some subelements measuring capability to support tanker operations have little relevance to support bases. While subelements measuring the quality of nearby ranges are important in comparing small aircraft flying bases and of some value to large aircraft bases, they are not relevant to most support bases. Functional experts from the Base Closure Executive Group (BCEG), Air Staff, and MAJCOMs contributed to the development of these mission-unique subelements. These subelements were refined during the BCEG deliberation period.

Installations in a category considered by a Department of Defense Joint-Cross Service Group (Depots, Product Centers and Laboratories, Test and Evaluation, and Undergraduate Flying Training) were further analyzed in a manner designed to be compatible with the efforts of the JCSG. The details of the analysis method created for each of these subcategories is provided in the subcategories section of the report.

The members employed a color-coded rating scale to assist in evaluating each base for every subelement under Criteria I-III, VII, and VIII. A "Green" rating meant more desirable for retention, "Red" meant least desirable, "Yellow" meant in between. For most subelements, the BCEG established grading filters, or goalposts, for the establishment of the color grades. These goalposts were either based on numerical values or established by expert judgment applied to a set of data. A subelement could be composed of various sub-subelements, which could themselves be composed of lower-level subelements. The color grade for each subelement was a result of aggregating, or "rolling up," the lower-level subelement colors.

In past rounds, this rollup has been done based on BCEG judgment of how the lower level grades should result in higher level grades. For the 1995 process, as a result of audit comments, the Air Force adopted a mathematical approach to rolling up grades. To judge the relative importance of the lower level measures, a weight was applied to each subelement. Normally, the weights are expressed as decimals representing a percentage, and all weights within a level add to 100. The weights represent the relative importance of each subelement as compared to the other subelements within that level of the analysis. The BCEG carefully analyzed the subelement weights and agreed on the appropriate values.

To obtain a rollup of the color grades, the colors are assigned a numerical value, shown below:

Green	1.00
Green Minus	0.67
Yellow Plus	0.33
Yellow	0.00
Yellow Minus	-0.33
Red Plus	-0.67
Red	-1.00

The rollup is accomplished by multiplying the numerical value of a subelement's color grade by its weight, adding the resulting products from all subelements, and dividing by the sum of the weights. The higher level subelement is then given the color grade closest to the resulting number. The following example illustrates the method:

	Subelement 1	Subelement 2	Subelement 3
Grade	G	Y-	Y+
Weight	40	20	40

$$(1*40)+(-.33*20)+(.33*40) = 46.6/100 = .466$$

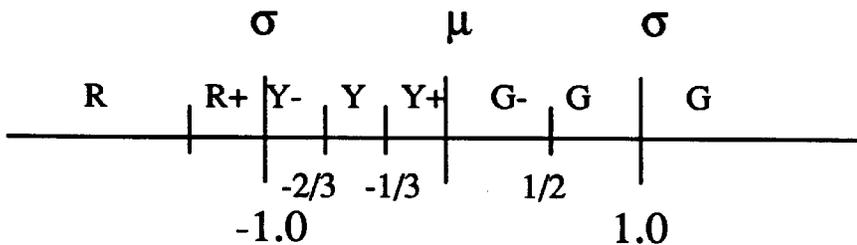
Closest Color = .33 = Yellow Plus

In the example, the three Subelements would rollup into an overall Yellow Plus grade for the higher level subelement.

The mathematical rollup method was used up to the criterion level. The criterion grades were not rolled together into an overall rating for the installation. Instead, the BCEG used their judgment to evaluate the overall value of an installation, based on the eight selection criteria.

For some subelements, color grades were assigned based on a base's capability relative to other bases' capabilities, rather than by applying an objective measure. In those cases, a standard deviation method was used to determine what color a given score received. These colors then represented that base's grade for the relevant element under consideration. In summary, a score at the mean ( $\mu$ ) or above was given a Green grade, while those scores below the mean were given a Yellow or Red. The following shows the detailed assignment of grades:

From 1/2 standard deviation ( $\sigma$ ) above the mean and higher:	Green
From $\mu$ to 1/2 $\sigma$ above the mean:	Green Minus
From 1/3 $\sigma$ below $\mu$ to $\mu$ :	Yellow Plus
From 2/3 $\sigma$ below $\mu$ to 1/3 $\sigma$ below $\mu$ :	Yellow
From 1 $\sigma$ below $\mu$ to 2/3 $\sigma$ below $\mu$ :	Yellow Minus
From 1 and 1/2 $\sigma$ below $\mu$ to 1 $\sigma$ . below $\mu$ :	Red Plus
Below 1 and 1/2 $\sigma$ below $\mu$ :	Red



Numbers were used for criteria IV and V, which were computed using the DoD COBRA cost model. Criterion IV includes the one-time costs of the action, and a 20-year net present value of the action (a negative number represents savings and the larger the negative number the greater the savings). Criterion V is the number of years for the costs to be repaid by savings, or return on investment period. The BCEG approved the COBRA products that comprised Criteria IV and V. The BCEG used a level-playing field COBRA analysis in its initial analysis, from which the tiering of bases was produced. A level-playing field COBRA analysis is accomplished for each base in a category being analyzed. The analysis assumes that only one base is closed and all units move to assumed gaining locations. The assumed gaining locations are selected based on preliminary capacity analysis and force structure alignments, but do not reflect consideration of operational constraints, environmental factors, and other potential moves. Those factors are considered prior to final closure or realignment recommendations, when a focused analysis is performed.

Criterion VI, the economic impact on communities, was analyzed under the direction of the Department of Defense Joint Cross-Service Group for Economic Impact. The Military Departments provided data which was compiled using the Joint Group's method, and presented to the BCEG for each contemplated closure or realignment action. In addition, the BCEG evaluated the effects of any multiple actions being considered by the Air Force within a metropolitan statistical area. DoD-wide actions affecting particular economic areas are evaluated by the DoD BRAC considerations. Criterion VI is presented as two numbers, which represent total job loss, direct and indirect, and job loss as a percentage of statistical or economic area population.

The bases in the operations subcategories of the flying category were subdivided into Large, Small and Missile bases. Large Aircraft bases beddown bomber, tanker or transport aircraft units and may have the potential to beddown small aircraft type units. Small Aircraft bases beddown fighter type aircraft units, may have the potential to accommodate some large aircraft. Missile bases in most cases are dual mission bases and include large aircraft flying operations.

After a grade or value was determined for each criterion, the BCEG reviewed the grades for all non-excluded bases in each category or subcategory. The BCEG members then discussed the various attributes of the bases, as well as the relative importance of each criterion to that type of base. Following this review and discussion, the BCEG placed each base into one of three tiers. This initial tiering process was based on a level playing field COBRA analysis and assumed a single total closure only. There is no ranking of bases within a tier. This tiering provides an initial input for the SECAF's consideration in her decision process.

Missile bases were first evaluated for their suitability to support missile operations and were assigned color grades for that capability. These bases all supported large aircraft operations, so they were then grouped with the remaining large aircraft bases and evaluated overall against large aircraft characteristics (Appendix 3). No tiering of missile bases was accomplished on missile capabilities alone; however, this additional Criterion I dimension was considered during the Large Aircraft subcategory tiering. The evaluation of missile bases is classified, and may be found in Appendix 12, the classified appendix.

The large aircraft bases were evaluated in terms of their capability to support a bomber, airlift, and tanker mission. The base's current primary mission was given 70 percent weighting against 15 percent for the other two missions. As mentioned above, where a large aircraft base included a missile capability, that missile capability was included in consideration of the tiering of all large aircraft bases.

Small aircraft bases were evaluated in terms of their capability to support a fighter mission and 100 percent of the weighting was given to that mission. The small aircraft bases were rated and arrayed in three groups, from most to least desirable for fighter missions (Appendix 4).

The BCEG compared all above-threshold AFRES C-130 bases. The BCEG did not compare other ANG or AFRES bases within subcategories, but reviewed them individually for potential cost effective closures or realignments (Appendices 6 and 7).

In addition to collection of data for the Joint Groups, the Military Departments were tasked to provide "military values" for the activities under consideration by the Joint Groups. Because the Air Force process did not produce such a "military value" for its installations, the Air Force provided the tiering of the installations in these categories. In addition, the Air

Force provided a functional value of the activities under consideration in the Joint Groups. In some cases, the activities considered by the Joint Groups did not correlate to the installations considered in the Air Force process. For example, some test and evaluation activities were located on Small Aircraft bases, and some activities were not accomplished on any installation. The submissions to the Joint Groups clarified the bases for the values reported.

Pursuant to OSD policy, the Air Force also analyzed alternatives suggested by the Joint Groups and participated in joint COBRA analyses. The description of the Joint Group alternatives and the Air Force analysis of those alternatives is included in the description of each specific category's analysis, found in the appendices to this report.