Our calculations of present-value costs are derived from cash flow models associated with various investment and recurring costs. Because the AWOS removal rates indicate that the Air Force may be significantly underresourced to meet two coincident MTWs, and because we could not obtain price data for new support equipment (as opposed to the upgrades discussed), we examined the peacetime recurring costs associated with each option.

We first describe the general models developed to assess both investment and operating costs. We discuss only results related to peacetime recurring costs. The labor cash flows could comprise both savings and costs. As investments are implemented over a five-year timeframe (based on Air Force and potential supplier inputs), labor savings may be realized through relocation of personnel not needed to support certain operations. Nevertheless, while potential savings in labor costs typically are factored into commercial-sector capital budgeting calculations, we chose not to include these in our assessment. We did so because the future number of personnel assigned to support LANTIRN will not affect the overall USAF head count, so reduced LANTIRN support labor costs cannot be considered as savings to the USAF.

Thus, it is more instructive to compare actual expected labor costs across the investment options. We estimated an equal incremental increase rate for this cash flow over the investment time period when assessing both regional support infrastructure development and decentralized support. Again, although we discuss our general ap-
approach to financial modeling, our results focus on recurring (not investment) costs for reasons discussed earlier.

Next, we modeled cash flows associated with transportation requirements for consolidated repair. Again, we assumed that transportation costs would increase during the implementation period and then level off for the remainder of the operational timeline. As with the labor costs, we assumed an equal growth rate in the transportation costs during the implementation period.

Finally, we modeled potential investment costs in terms of costs for LRU spares, infrastructure, and support equipment. We estimated an equal negative cash flow for each year of the investment period, dividing the total expected investment associated with these assets by the number of investment years in this case (or five years based on Air Force and potential supplier inputs). Again, we show only results for the recurring cost computations; regardless of the support option selected, the Air Force may need to make a substantial investment to ensure certain capabilities.

**RECURRING OPERATING COSTS**

We analyzed peacetime annual operating costs in terms of labor and transportation costs. Labor costs are based on the weighted average of the personnel skill mix factored into our assessment models. We compared Air Force personnel costs with contractor costs (values not shown), so our annual “blue suit” costs include an acceleration factor and additional training costs to account for total costs per person to the Air Force.\(^1\) These costs increase the annual labor costs to the Air Force by about 43 percent above base pay, resulting in a cost equivalent of about $61,500 per person. The option of using Air National Guard personnel was not considered in this analysis.

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\(^1\)AFI65-503, *U.S. Air Force Cost and Planning Factors*, Table A19-2, A30-1, 1999. The standard rates are a composite and include the following pay elements: basic pay; retired pay accrual (a percentage of basic pay); basic allowance for quarters; variable housing allowance; incentive and special pays that include aircrew, hazardous duty, physicians, dentists, nurses, hostile fire, and duty at certain places. We also include training costs not captured in the composite pay—estimated at about 10 percent of base pay per year. Then, using data in Table A30-1, we apply an acceleration factor (33 percent) recommended for A-76 studies (outsourcing comparisons) for a total of 43 percent above base pay, equaling about $61,500.
We also assumed a certain productivity rate for peacetime operations. This is a metric used in some industries to reflect the number of items produced per paid employee hour. We found that our model outputs are very sensitive to these productivity rates, so we used a value of 60 percent productivity for military manpower during peacetime and 90 percent during war. These numbers also closely match USAF manpower loading factors.²

We chose a 2.7 percent discount rate based on the current Office of Management and Budget (OMB) A-94 constant dollar discount rate, and were quoted a rate of about $3 per pound for moving pods with a commercial carrier. Computing military air cost is difficult because of interorganizational financial rules, so we estimated the expected cost per pound for a C-130 transportation network using the Air Materiel Command charge per flying hour of $3839. We then computed the expected peacetime fill rates for the aircraft flying these support loops and amortized the costs accordingly. This calculation yielded a range of about $5 to $8 per pound moved. Although these figures may seem high compared with the commercial option, we note that RAND was given a quote only, with no firm contract, and that commercial carriers may not be able to support certain military contingencies and locations. So again, the decision to centralize hinges primarily on capabilities. Returning to our present-value analysis, we show the relative recurring costs of each option using the commercial carrier transportation rates.

Figure H.1 shows the present value of transportation and labor costs—the two primary operating expenditures—over a 15-year timeline. The consolidated options will carry recurring transportation costs to move parts between support and operating locations. For our analysis of transportation costs, we investigated several commercial transportation options, discussed in Appendix G. Figure H.1 reflects Emery Courier Service (which can accommodate classified items) transportation costs for LANTIRN pods. We do not show our analysis for the four-echelon options (where LRUs are moved) because we found that they do not offer significant benefits in terms of equipment and personnel requirements. Further, we

²AFI38-201, Determining Manpower Requirements, Air Force working team interviews, and site visits.
used proprietary data to compute the contractor labor options, so these results are not shown. We can, however, state that from a financial and operational standpoint, we found no advantage to using contractor labor. Note that there is no marked difference across the six options shown. Although it appears as though single CONUS transportation costs are equal to the three-regional option, we found that commercial rates are actually lower for shipments going to and from the United States, although they may be higher within a foreign region. Thus, we chose to chart the more conservative case, where all transportation costs are equal to those computed for the three-regional structure.

Recurring costs are affected not only by the support structure used but also by the support locations. Establishing regional repair centers where LANTIRN repair already occurs results in lower transportation costs. Seymour Johnson Air Force Base in North Carolina, for example, currently accounts for about 25 percent of the LANTIRN pod assets. Using this base as a proposed regional center could sig-
nificantly reduce shipping costs. Although we do not show this op-
tion in Figure H.1, it warrants consideration in the implementation
plans for a regional support structure. Again, the main point here is
in the relative comparisons between options. As Figure H.1 indi-
cates, there are no significant operating cost benefits to any particu-
lar investment option or logistics structure. Support structure deci-
sions, then, should focus on performance or capability variables and
not on costs.