RECOMMENDED CHANGES IN EXISTING POLICY

This chapter makes a series of recommendations for changes to existing ACS Child Care policy as contained in Army Regulation AR 608-1 and one recommended change in the Department of Defense Construction Criteria Manual, DOD 4270.1-M. It also proposes several other policies which will greatly affect the quality of child care services offered by any community.

The results of the latest research on child care indicates that there are some existing policies which are not in the best interest of child development. We also feel, based on our professional judgement, that certain existing policies unintentionally have architectural implications which are not in the best interest of children.

This section is intended to serve the purpose of DA Form 2028 (Recommended Changes to Publications), and as a stimulus for additional policy decisions.

The first eight recommendations pertain to AR 608-1, the ninth to DOD 4270.1-M. Underlined portions are marked for revision, either deletions in existing paragraphs or additions. The remaining four recommendations are for new policy suggestions.

401 Developmental Services
402 Family Child Care
403 Mixed-Age Groupings
404 Infant Stimulation
405 Developmental Importance of Outdoor Play Yards
406 Role of the Kitchen
407 Safe Windows
408 Sources for Design Guidance
409 Square Feet per Child
410 Maximum Center Size and Campus Plans
411 Network of Child Care Services

While these policy recommendations were written initially for one context only, they apply also to most other contexts.
ISSUE

There is no question that quality child care is equated with developmentally-oriented child care, i.e., the provision of developmentally-oriented services to stimulate intellectual, social, and physical development in a context of security, warmth, love, care, health, and safety.

It is clear from various statements in Army Regulation AR 608-1, Army Community Services Program, that the role of child care in the military is to include both child care and child development services (e.g., Chapter 1, Section I, paragraphs 1-3j(1) and (2) and elsewhere).

Though most sections stress child care and development equally, other sections seem unnecessarily to stress care matters to the relative exclusion of development. It is commonly agreed, however, that all child-care facilities, for infants through their use for after-school drop-in programs, and including all outdoor play areas, should be designed first and foremost to stimulate development, and that this emphasis must be in a context of health and safety.

The consultants therefore recommend that several sections of AR 608-1 be revised to make this point as clear as possible.

EXISTING

The Chief of Engineers, HQDA, will provide technical guidance on all engineer matters concerning CSS facilities. This includes developing design and space criteria, conducting periodic studies to update facility designs and construction techniques, and methods to insure a safe and healthy environment for children.

PROPOSED

The Chief of Engineers, HQDA, . . . , and methods to insure a developmentally-appropriate, safe, and healthy environment for children.
EXISTING

Energy conservation. Buildings used exclusively for child support services will be designed and operated to conserve energy resources to the extent possible, while providing a healthy environment for children.

PROPOSED

Energy conservation. . . . extent possible, while providing a developmentally-appropriate and healthy environment for children. (See also DEVELOPMENTAL IMPORTANCE OF OUTDOOR PLAY YARDS below for additional proposed changes to this paragraph.)

EXISTING

The environment of CSS facilities should be pleasant, child-scaled, well-lighted, attractively furnished, easily kept in a sanitary condition, and conducive to efficient operation.

PROPOSED

The physical environment of CSS facilities should be designed to facilitate both child care and developmental services, should be pleasant, child-scaled, well-lighted, attractively furnished, easily kept in a sanitary condition, and conducive to efficient operation.

EXISTING

Play equipment will be selected carefully with regard to size, safety, and sanitary features.

PROPOSED

Play equipment will be selected carefully with regard to potential for intellectual, social, and physical development, and with regard to size, safety, and sanitary features. (See also DEVELOPMENTAL IMPORTANCE OF OUTDOOR PLAY YARDS below for additional proposed changes to this paragraph.)
Family child care is one of the three major types of child care offered nationally. It refers to care offered in a home part-time by the residents of the home. It serves only as many children as it can integrate into its own physical setting and pattern of living. As stated in the Federal Interagency Day Care Requirements (1978), "It is especially suitable for infants, toddlers, and sibling groups and for neighborhood-based day care programs, including those for children needing after-school care" (p. 4).

A family child care home may serve no more than six children (3 through 14) in total (and no more than five when the age range is infancy through 6), including the family child care parent's own children.

As stated in the Federal Interagency Day Care Requirements (1978):

> It is expected that a community program of day care services will require more than one type of day care facility if the particular needs of each child and his parents are to be taken into consideration . . . . While it is preferable that the three types of facilities be available (family day care home, group day care home, and day care centers), this is not a requirement. (p. 4)

As stated elsewhere in this Design Guide, family child care homes account for upwards of 40-50% of all children in organized child care (Cohen, 1974). It is, furthermore, recognized as having distinct advantages for some children over other forms of care. By using an existing home, slightly modified to make it an appropriate place for child developmental services, the setting is more natural for younger children than a large center, yet by integrating it into a base-wide network, it is possible to have the advantages of trained workers, extensive resources, consultants, centralized purchasing, and centralized curriculum coordination of the largest centers. It is, furthermore, the most flexible arrangement for children, both in terms of daily activities and responsiveness of the caregiver to the children.
Despite the fact that the current use and expected increase in demand for family child care homes is a clearly emerging trend, very little is said about family child care in current military regulations. The authors of this Guide are aware of the worries about monitoring and safety of family child care homes on military installations. But rigorous registration and incorporation of child care homes into a comprehensive network can alleviate most of these concerns (Cohen, 1974).

EXISTING

Family Day Care Centers. If Family Day Care Centers are authorized, local policy will be developed to ensure that each home is evaluated by the medical authority, in coordination with the ACS Officer. Each home must receive authorization to operate as an individual Family Day Care Center. Approval to operate a Family Day Care Center will depend on local need, the adequacy of the child care, and health and safety considerations. Provisions of the local regulation will be compatible with the provisions of NFPA 101, Family Day Care Homes, and with the provisions of Paragraphs 8-18, 8-20a, b, d, f, g, h(1), i, j, 8-21, 8-22, 8-23.

PROPOSED

Family Day Care Homes. Approval to operate a Family Day Care Home will depend on local need, the adequacy of the child care and developmental services offered, and health and safety considerations. Family Day Care Homes should be integrated into a comprehensive Child Care Network of services for the base as a whole. Family Day Care Homes may serve no more than six children (3 through 14) in total (and no more than five when the age range is infancy through 6) including the family child care parent's own children. Modifications to homes to make the setting more developmentally-appropriate for a group of children will be made within the confines of Army Regulations which prohibit the use of appropriated/nonappropriated funded structural changes. Provisions of the local regulation will be compatible with . . . 8-23. Simple, inexpensive modifications to Family Day Care Homes will be in accordance with the recommendations of DG 7110-3-143.
Field research conducted by the authors of this Design Guide has found that the centers judged to be the best programmatically make few age-specific distinctions among preschoolers from about 2 to 5 or 6. Directors and staff interviewed preferred a separation between infants and older preschoolers, and between preschoolers and after-schoolers, but not total isolation of any age group from other age groups (Travel Report, 1978). Recent national research supports the values of cross-age contacts and cross-age learning in child-care settings.

The weight of evidence, both from our observations of children's behavior on military and civilian sites, from our interviews with child-care directors and national experts, and other recent research strongly favors opportunities for both indoor and outdoor activities in cross-age groups. This evidence is in slight variation to several portions of AR 608-1.


The concensus of opinion in the Army Community Services Division is that AR 608-1 should be reviewed and will probably have to be amended in terms of providing opportunities for both indoor and outdoor activities in cross-age groups.

EXISTING

Child Care Services . . . Providing for the diversity of abilities, interest, physical strength, dexterity, and passive or aggressive characteristics of children of the same age so that the caregiver can consider allowing children of similar abilities to play together.
PROPOSED

Providing for the diversity of abilities ... of children of the same and different ages so that the caregiver can consider allowing children of similar abilities and similar or mixed ages to play together.

EXISTING

Play areas should be separated by age group (para. 8-5c). Unsupervised access of older children to toddlers and infants should be restricted.

PROPOSED

Provision should be made for children of similar and different ages to play together in developmentally-appropriate play yards. Although unsupervised access of older children to toddlers and infants should be restricted, mixed-age grouping benefits both the older and younger children. Caregivers should allow mixed ages to play together, and play yards should not be strictly separated by age. Also, children should not be separated and grouped simply because staff-child ratios are different for different age groups (para. 8-5 c(1)).

EXISTING

An outdoor play area of at least 100 square feet per child is recommended. Play areas will be enclosed by child-safe fencing which is not readily climbed. Horizontal slat fences are prohibited. Separation of children by age group is strongly encouraged. Supervision of all children at all times is required.

PROPOSED

Outdoor play yards ... slat fences are prohibited. Although unsupervised access of older children to toddlers' and infants' play yards should be restricted, provisions should be made for children of different ages to play together in developmentally-appropriate play areas. Supervision of all children at all times is required.
ISSUE
The first 5 years, and especially the first 3 years of life are recognized as critically important to later development. An infant needs much more than just adequate physical care. A number of environmental stimulation ideas have arisen recently in the child development literature, and have been interpreted in terms of improving the physical environment to provide a full range of infant environmental stimulation (see Burnette, 1970; Chase, 1974, 1975; Chase and Williams, 1973; Chase, Williams, Welcher, Fisher, and Geller, 1974).

EXISTING
Provide meaningful interactions between caregivers and infants, to include playing with the infant outside the crib.

PROPOSED
Provide meaningful interactions between caregivers and infants, to include playing with the infant outside the crib and to include providing a full range of infant environmental stimulation.

EXISTING
Infants occupying the crib room will never be left unattended.

PROPOSED
Infants will never be left unattended in any indoor or outdoor space at the facility.
Play is integral to development and not a superfluous burning off of excess energy (Millar, 1968). Children's play is critical to psychomotor, intellectual, and social development.

Relative to goals of child development, traditional and sculptural playgrounds have been evaluated and have been found wanting (Hayward, Rothenberg, and Beasley, 1974). Designers are beginning to stress cognitive and social play opportunities along with traditional physical play. This means that such things as adventure play, creative play, and environmental play are receiving more emphasis in child-care play yards.

The space programmed for outdoor play and the equipment provided is usually poor and an after-thought. While the problem of providing adequate outdoor areas is most critical in civilian and urban facilities, the problems of low aspirations and lack of ideas for developing and furnishing outdoor areas are a significant problem for the military as well. Even the new, well-furnished outdoor area at Bolling Air Force Base doesn't hint at the possibilities of gardens, animals, or a "work yard" of loose building materials that could fascinate and contribute to the development of children.

Thus while the trend has been to realize the developmental importance of play both indoors and outdoors, budgets and design skill has not followed suit with regard to the design of outdoor play yards at child-care centers. (For a range of program and design options, see DEVELOPMENTALLY-APPROPRIATE PLAY YARDS in the SITE DESIGN AND DEVELOPMENT section below.)
EXISTING

The Chief of Engineers . . . . This includes developing design and space criteria, conducting periodic studies to update facility design and construction techniques, and methods to insure a safe and healthy environment for children.

PROPOSED

The Chief of Engineers . . . . This includes developing design and space criteria for indoor and outdoor activity spaces, conducting . . . and methods to ensure a developmentally-appropriate, safe, and healthy environment for children. (See also DEVELOPMENTAL SERVICES and SOURCES OF DESIGN GUIDANCE for additional changes to this paragraph.)

EXISTING

Play equipment will be selected carefully with regard to size, safety, and sanitary features.

PROPOSED

Play equipment will be selected carefully with regard to potential for intellectual, social, and physical development, and with regard to size, safety, and sanitary features.

EXISTING

Play area surfaces will be as safe as possible. Surfaces under swings and climbing equipment will be of a type that will minimize injuries from falls.

PROPOSED

Play area surfaces will be as safe as possible. Surfaces in all physical play areas will be of a type that will minimize injuries from falls.
EXISTING

Safety and sanitation will be considered first when selecting play equipment.

PROPOSED

Appropriateness for intellectual, social, and physical development together with safety and sanitation will be considered when designing play yards and selecting play equipment.
Very young children experiment upon the world of taste, texture, size, and temperature by placing objects in their mouths. Through this general mode, they learn about their environment, and eventually as they get older, about the specific task of eating. Piaget (1967) has discussed the importance of the child's understanding the entire cycle of where food comes from, how it is prepared, and so on. But in many educational institutions in the U.S., food experiences tend to be limited to a 15-minute regimented gobbling of preprocessed food in disposable containers.

In discussing Swedish child care centers, Passantino (1971) describes a very different attitude:

All aspects of food, its growing, preparation, and consumption are seen as learning experiences to be capitalized upon. The children themselves tend vegetable gardens and fruit-tree orchards located on-site; they are taught nutritional values of the products by "educator-dieticians" and encouraged to participate in the cooking of their own meals. Electric ovens, many designed with a high platform on one side for the children, real sinks, and plate storage at child level, afford the opportunity for the children to prepare their own mid-day snacks. The dining tables alongside these cooking areas are set daily with well-designed tableware, utensils, napkins, and fresh flowers. (p. 410)

While institutional kitchens are potentially dangerous places and a child can easily be hurt there, and cleanliness is also a major concern, kitchen activities, cutting, washing, cooking, cleaning, etc. are important developmental activities and a program that doesn't include them is missing a major and rich resource to the program. Unfortunately the new Army Regulations, AR 608-1, do not allow children in the kitchen.

It has been suggested in correspondence to the consultants from DAAG-PSC that all child care centers do not require full kitchens, but may have catered meals. Here the problem looms again,
for the children are prevented from any developmental learning from the cycle of food growing, preparation, and clean-up that Passantino so eloquently speaks of above. Some agreement has already been expressed in concordance with the position of the consultants that while it is preferable to allow small supervised groups of children in the kitchen, it is not possible without changing existing Army Regulations.

Two options seem viable.

- One central institutional kitchen for staff only, with satellite kitchens supplied with equipment for child-adult use, e.g., small warming ovens with platforms on one side, low sinks, local storage at child level, or regular height equipment with a raised platform for children on one side (see the diagram in pattern 1026, CHILDREN IN THE KITCHEN), and immediately adjacent eating areas for a maximum of 8-16 children.

- Alternatively, several fairly complete kitchens throughout the center (e.g., one for each HOME BASE FOR 8-16 CHILDREN as specified in pattern 906), each one capable of being used by staff to prepare group meals (8-16 children) and to be used by children and staff together to prepare food and mid-day snacks.

EXISTING

A kitchen is required as a separate unit when children are to remain for meals ....

PROPOSED

At least one kitchen is required as a separate unit when children are to remain for meals ....

EXISTING

Children will not be allowed in the kitchen of CSS centers.
PROPOSED

Children will not be allowed in the central kitchen of CSS centers. If food is prepared in a central kitchen and then garnished and served in satellite kitchens, children will be allowed in such satellite kitchens, but only under close supervision. If a series of small kitchens are contained in the CSS center, each one designed to be capable of being used by staff and children, children will be allowed in such mini-kitchens, but only under close supervision. Design Guidelines for both types of kitchens are given in DG 1110-3-143.
ISSUE

There is no question that one function of child care services is to maintain the physical well-being and safety of the child. Following the lead of the American Institute of Architect's guidelines on performance specifications, contemporary regulations are often phrased in terms of the performance to be achieved, not one particular material solution. A case in point in the current Army regulations on child care is the issue of window safety. There is no question that windows should be safe so that children will be protected from falls, and yet there is also no question that heavy screening is not the only solution. Shatter-proof glass, windows low to the ground, and windows designed in terms of a pattern of small panes are all other possible solutions to this problem. In fact, as will be seen from the argument in the pattern on EXTENDED INDOOR-OUTDOOR RELATIONS, it is very desirable for a developmentally-oriented child care center to have windows low enough--and clear enough--so that children can see indoors and outdoors with no difficulty. This relation helps to reinforce the importance of the DEVELOPMENTALLY-APPROPRIATE PLAY YARDS and helps to maintain CHILD-SCALED ENVIRONMENTS and CHILD-SCALED BUILDING MATERIALS (see patterns below).

EXISTING

All windows will be firmly screened to protect children from falls and to prevent insects from entering.

PROPOSED

All windows will be designed to protect children from falls and to prevent insects from entering. Design Guidance on alternative ways to accomplish this given in DG 1110-3-143.
ISSUE

In any future revision of AR 608-1 and corresponding documents for other military services, the current Design Guide on Child Care Facilities and parallel Technical Manual on Children's Play Environments should be referenced as principle sources for design guidance for implementation of the regulations, alternative equally appropriate ways of accomplishing the same regulations, and further criteria and recommendations for the planning, programming, and design of developmentally-oriented child care facilities and their outdoor play yards.

There is some question that it may be redundant and unnecessary to list these documents in the AR, but as these are the basic regulations, equivalent to State licensing requirements for child care facilities, and thus will be the first and perhaps the only standards that some people will think necessary to follow, it seems that they should refer to other recommendations and requirements.

There are a number of places requiring minor revisions.

AR 608-1
PARAGRAPH 8-3b

EXISTING

The Chief of Engineers, HQDA, will provide technical guidance on all engineer matters concerning CSS facilities. This includes developing design and space criteria, conducting periodic studies to update facility designs and construction techniques, and methods to insure a safe and healthy environment for children.

PROPOSED

The Chief of Engineers, HQDA, will provide design and technical guidance on all architectural, landscape architectural, and engineering matters concerning CSS facilities. This includes developing design and space criteria for indoor and outdoor facilities, conducting periodic studies to update facility designs and construction techniques, and methods to ensure a developmentally-appropriate, healthy, and safe physical environment for children.
EXISTING

The Chief of Engineers will periodically issue design guides and definitive drawings, supplementary criteria, and requirements for constructing and renovating physical facilities.

PROPOSED

The Chief of Engineers will periodically issue design guides and technical manuals, supplementary criteria, and requirements for constructing and renovating physical facilities.

EXISTING


PROPOSED

Construction of new buildings, alterations, or modifications of existing facilities are covered in AR 210-20, AR 210-55, NFPA 101, DG 1110-3-143, and TM 5-803-11.

EXISTING

Facility construction requirements, regardless of source funding, will be coordinated with the Installation Planning Board (AR 210-20). Definitive drawings or design guides issued by the Chief of Engineers will be used to the extent possible in planning and construction of CSS centers.

PROPOSED

Facility construction requirements (AR 210-20). Design guides and technical manuals issued by the Chief of Engineers will be used in planning and construction CSS centers (e.g., DG 1110-3-143 and TM 5-803-11).
EXISTING

Design guidance on play areas and equipment is contained in TM 5-803-11.

PROPOSED

Design guidance on the location, siting, and design of play yards is contained in TM 5-803-11 and sections of DG T110-3-143.
ISSUE

Next to the total number of children in a child care facility and the maximum group sizes, many national experts advise that an adequate amount of space available for children's activities is absolutely necessary to ensure a quality, developmentally-oriented child care program.

In calculating the total number of square feet per child, the following are the major categories of space to be considered:

- Primary usable activity space
- Secondary activity space, staff space, and other assignable space
- Non-assignable space, including circulation, partitions, and walls

Detailed calculations for each of these, considering the range of activities necessary to be programmed into a good center and nationally recognized standards for amount of square footage of usable activity space per child are contained in charts in pattern 901 BUILDING GROSS SQUARE FOOTAGE.

For licensing, most states require a minimum of 35 square feet per child of usable activity space, exclusive of eating, napping, closed storage, sinks, circulation, etc. One state requires 50 square feet. Cohen (1974) has therefore recommended that a child care center needs at least 35 square feet per child, and that 50 square feet is preferable.

Research has been conducted to determine the relation between amount of space and tendencies toward social versus aggressive behavior. Several studies have found that most social involvement appears to occur at medium density (35-50 sq. ft.), while aggressiveness occurs at higher densities (below 35 sq. ft.) and random behavior occurs in large, undifferentiated settings (over 50 sq. ft. per child).

Based on such research, the Child Welfare League of America (who accredit quality child care centers—see EXISTING STANDARDS AND REGULATIONS) has recommended the following:
A ratio of 50 sq. ft. of playroom floor space per child exclusive of space occupied by sinks, lockers, and storage cabinets, is the optimum requirement for appropriate program activity and comfort. (1973, p. 83)

Existing Army regulations have adopted the slightly lower, 35 square feet per child standards for usable space for child activities.

Detailed calculations in pattern 901 GROSS BUILDING SQUARE FOOTAGE also show that 25-38 square feet per child is required for secondary activity space, staff spaces, storage, lockers, cubbies, kitchens, napping areas, etc.

Finally, a multiplier of 20-25% of assignable space is required to provide for circulation, partitions, and walls, i.e., all those spaces which are neither assignable for primary or secondary activities.

As shown in the accompanying chart, the absolute minimum total square footage for a child care center is 72 square feet per child. As also shown, an adequate amount, and thus the recommended amount, to ensure quality developmentally-oriented child care, following the above arguments, is 100 square feet per child.

<table>
<thead>
<tr>
<th>Calculations for Gross Square Footage for Child Care Building and Site Under Minimum, Recommended, and Generous Conditions</th>
<th>Absolute Minimum</th>
<th>Adequate/Recommended</th>
<th>Generous</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Facility Primary Activity Space</td>
<td>35 sq. ft./c. (Some state min.; NFPA; AR 600-1)</td>
<td>42 sq. ft./c. (Bryan; Princett min.)</td>
<td>50 sq. ft./c. (Princett rec.)</td>
</tr>
<tr>
<td>2. Facility Other Assignable Space</td>
<td>25 sq. ft./c. (Moore)</td>
<td>35 sq. ft./c. (Moore)</td>
<td>42 sq. ft./c. (Moore)</td>
</tr>
<tr>
<td>3. Facility Non-Assignable Space</td>
<td>20% of assignable: 12 sq. ft./c</td>
<td>25% of assignable: 22 sq. ft./c</td>
<td>30% of assignable: 30 sq. ft./c</td>
</tr>
<tr>
<td>4. Total Facility Size (1+2+3)</td>
<td>72 sq. ft./c</td>
<td>100 sq. ft./c</td>
<td>122 sq. ft./c</td>
</tr>
</tbody>
</table>
Current military construction standards specify a ceiling of 75 square feet per child. This should be immediately revised to 100 square feet per child to ensure that centers will be allowed at this adequate-recommended size.

Other self-explanatory, recommended changes are shown below.

EXISTING

Child Care Centers: Child care centers may be established as required to provide day care for preschool age children (up through 5 years old in situations where the mother is employed, or at times when the family is temporarily unable to oversee and care for the child. Minimum size of facility shall accommodate not less than 25 children. Space allowances for child care centers shall be based on 75 gross square feet per child. The space allowance is intended to provide multi-bed sleeping rooms and playrooms (separate rooms for children under two years old), isolation rooms, food service facilities, toilets, office and lobby waiting room. Number of children to utilize the facility shall be based on local experience where applicable. Where no previous experience is available, number of children anticipated shall be based on the number of married military families receiving direct installation support, multiplied by 20%.

PROPOSED

Child Care Centers: Child care facilities may be established as required to provide developmentally-oriented child care for preschool age children (6 weeks through 5 or 6 years) and to provide after-school care for elementary school children (6 through 12) in any situation where it is warranted for care and for the stimulation of early development. Child care facilities shall include child care centers to accommodate not less than 26 children and family child care homes for a maximum of 6 children including the children of the caregiver. Space allowances for child care centers shall be based on 100 gross square feet per child. The space allowance is intended to provide primary child activity areas.
(separate spaces for infants under two years of age), sleeping areas, kitchens and eating areas, bathrooms, sick bay, laundry, etc., as required for the full functioning of a quality child care center. Number of children to utilize the facility shall be based on local experience where applicable.

Suggestion has been made that it would be valuable to have a formula for determining child care need. The current DOD Construction Guide criteria seem inadequate. Consideration should be given to commissioning a study of this matter.
One of the most important decisions to be made in planning and programming child care centers is the number of children to be served in one facility. Current military child care center capacities range from less than 50 children up to over 300 children (e.g., Oakland Army Depot to Ft. Lewis, Ft. Bragg, or Ft. Hood). Most civilian centers visited as part of the research phase of this project served between 50 and 100 children, with only the Helen Owen Carey Child Development Center in New York (235 children) and the Pacific Oaks College Children's School in Pasadena, California (200+ children) being of the scale of the average military centers, and none was in the scale of Ft. Lewis (260 normally, 315 overflow capacity, 700 children passing through in an average day, 3000 per month) or the two 300-child centers being planned for Ft. Hood and Ft. Bragg.

On the other hand, a number of studies have found that the optimal number of children in a center at one time is 45 to 60 children. Evans, Shub, and Weinstein (1971) found that the optimal number was between 45 and 60 and that this size allows teachers to feel close to one another while still being a large enough group to allow for sharing of materials, cooperative program development, and substitution in case of absence. In addition, they also found that it is the most effective grouping in which a single supervisor can be effective--fewer children will not make full use of a supervisor's time and expertise, and more children will dilute his or her benefits or require an assistant director or supervisor, with the attendant increase in bureaucracy. Similarly, centers with fewer than about 45 children find they cannot economically make ends meet without very high fees or massive outside assistance.

In a nationally recognized study, Prescott and Jones (1976) found that center size was a reliable predictor of program quality. The variety and quality of children's developmental experiences were directly affected by the size of the facility. In centers which served over 60 children, major emphasis tended to be placed on rules and routine guidance. Conversely, teacher emphasis on these concerns was found to be significantly lower in smaller centers. Opportunities for "pleasure, wonder, and delight" were significantly higher in centers under 60 children.
Prescott and Jones (1976) and Prescott and David (1976) also found that large centers rarely offered children the experience of participating in wide age-range groups. Mixing of ages in smaller centers offered opportunities for older children to serve as models and facilitators as well as enriching the overall play possibilities.

The play areas of large centers were rated low on organization, variety, and amount of things to do per child. Children were seldom observed to be highly interested and enthusiastically involved.

From our own interviews (Travel Report, 1978) we found general agreement with these findings. For example, Evan Nelson, the director of the Federal Employees Cooperative Day Care Center in Washington, D.C., suggested that from the child's point of view, 30-40 children is as large a group as should be accommodated. The younger children (around 2 years of age) are overwhelmed by a variety of things including the numbers of staff, the impact of the older children, the size of the space, and the total number of children.

Private civilian day care centers find that the first financial break-even point is around 50 children. A study by Abt Associates (1971) also found that although larger centers cost a little less per child for operating expenses, they seem to find it harder to provide quality care even when they maintain favorable staff-child ratios.

The "best judgement" of Richard Ruopp of Abt Associates after 10 years of experience studying child care centers across the country, is that units of 75 children are best, both for the children and the caregivers. Centers as large as 300 may be all right, he says, if they are subdivided into modules to create a series of mini-centers (Personal communication, 1978).

At the present time in this country, the magic number 60 is just in the recommendation stage by a number of national experts. But in Australia, the Regulations of the Child Welfare Act of 1939, which are found to be appropriate and therefore still in effect---specifies that:
410 Maximum Center Size and Campus Plan

The maximum number of children who may be cared for in the licensed premises at any one time shall be 60. (Kindergarten Union of New South Wales, Regulations from the Child Welfare Act of 1939)

We can summarize this situation in this country in four points:

- Many military child care centers exceed the nationally recommended sizes, and the current orally expressed policy seems to be for military centers planned for the near future to continue this trend.

- The civilian trend, for the most part, is toward smaller centers, in the range of 60 to 100 children.

- The nationally recommended maximum size to ensure quality child care is 60-75 children.

- Two large centers (200+ each) judged to be successful and to offer individualized, sensitive, developmentally-oriented programs for children—Ft. Bragg Nursery Village and Pacific Oaks College Children's School—are planned on a village or campus concept. Different programs are housed in different buildings each with its own qualified staff and head teacher and with the overall direction being to establish authority and yet allow autonomy. This is an emergent idea which may deserve to be a trend.

**Policy Recommendation**

- Whenever possible, child care centers should be planned for a maximum capacity of 60 to 75 children.

- Any center needing to serve significantly more than 60 children should be administratively, conceptually, and architecturally subdivided into programs and modules of 60 to 75 children maximum each. These programs and modules can be combined in a campus plan or village concept, either in separate buildings or in well-defined separate wings of one building. In the latter case, separate
entrances should be assured. Separate buildings or wings in a village or campus plan might include an infant program, scheduled part- or full-day care, drop-in care, formal preschool, and an after-school program.

Planning and design guidelines for the above centers are given in DG 1110-3-143; see sections on NEIGHBORHOOD CENTERS FOR 60-75 CHILDREN, CAMPUS PLAN FOR VERY LARGE CENTERS, and NETWORK OF CHILD-CARE SERVICES AND FACILITIES.
A network of child care services is a comprehensive system of center-based child care centers and family child care homes organized in an integrated system to serve an entire community. In a study commissioned and published by the U.S. Department of Health, Education, and Welfare, Donald Cohen (1974) recommends that communities and towns establish a comprehensive child-care network with centralized administration, purchasing, and curriculum guidance, but with satellite neighborhood-based and family child care homes. Hopefully, this would achieve the organizational consistency of large centers, and the intimacy of both small, neighborhood- or work-based centers and neighborhood-based family child care homes.

A number of networks have evolved and have been the subject of national studies (e.g., the Kentucky Rural Child Care Project, the Berkeley California Early Childhood Education System, the Pasadena Community Family Day Care Project, the Houston Neighborhood Centers Day Care Association, and the Children's Centers of Santa Monica; cf. Cohen, 1974, p. 164 for references to the various studies).

Generally, it has been found that networks are capable of a range of planning and program operations beyond the resources of an individual program. Mass purchasing, curriculum development, formal consultation, community-wide planning, integration of various child care settings, integration of child care and public school programs, centralized professional administration, evaluation—all of these have been found to be easier to accomplish through a child care network. The existing networks illustrate the importance of diversity, choice, and the responsiveness of organized systems to varying needs and changing conditions.

Though it is still a small emergent trend, the idea seems very sound and should provide another valuable model for military child care planning. Most importantly, it provides a supportive network and resources so that a series of small family child care homes can be authorized on installations without the worries of lack of control, lack of adequate staff, consultants and resources, and lack of monitoring of safety, health, and developmental standards.
Our recommendation, therefore, is the following:

- Every military installation should plan a comprehensive child care services network, to be coordinated by the installation Child Care Coordinator, or equivalent for other services.

- A network should include one large center-based child care facility (organized in a module campus or village plan if significantly larger than 75 children capacity), several neighborhood-based medium-sized child care centers (60-75 children capacity, e.g., one for each identifiable community within the installation if a large installation), and several family child care homes.

- The center-based child care facility should also serve as the central hub of the network, and should contain the office of the installation-wide Child Care Coordinator, a resource center, and offices for installation-wide itinerant professionals.

- A unified procurement procedure is advised whose goal is to encourage small, dispersed facilities across the installation.

- Although there is little difference between "preschools" and the highest quality of "developmentally-oriented child care" (the differences being mainly in the amount of time spent in the center and the ages served), if a formal, academically-oriented preschool is to be included as part of the network, it should be close to other child care facilities or part of them, e.g., part of a large center-based campus plan center.

Planning and design guidelines for networks and their constituent parts are given in DG 1110-3-143; see sections on NETWORKS OF CHILD CARE SERVICES AND FACILITIES, FAMILY CHILD CARE IN THE NETWORK, NEIGHBORHOOD CENTERS FOR 60-75 CHILDREN, CAMPUS PLAN FOR VERY LARGE CENTERS, and MODIFICATIONS TO HOMES FOR FAMILY CHILD CARE.