Methodology

This section presents a historical-narrative perspective, by collating information on physical expansion of the British Empire and its impact on administrative decisions for location of cantonments in India. There are no specific stages stated in contemporary literature on the history of expansion of British Empire in India. For this study, the expansion of the British Empire has been divided into three stages:

1. Period of expansion of Presidency territories (1757-1800)
2. Period of expansion through cession and control over territories (1801-1818)
3. Period of consolidation (1819-1947)

The first two stages have been represented in one map covering 1757-1818, i.e. from the beginning of British expansion following the Battle of Plassey and up to the conclusion of the Fourth Anglo-Maratha Wars (Map 2.1). The third stage is depicted through two maps, viz. 1819-1856 (up to cession of Oudh) in Map 2.2 and 1857-1947 (up to complete control over India) in Map 2.3.

Establishment of Cantonment Towns

The founding of cantonment towns as a means of permanent stationing of troops has its roots in the English trading posts called Factories, the first of which was established in Surat in 1612. The acquisition of independent positions for fortified factories at Madras (1640), Bombay (1668) and Calcutta (1690), respectively known as Fort St. George, Fort and Fort William marked the beginning of the three Presidency Armies. The territorial expansion within India was regionally achieved through these three Presidencies and maintained by several cantonment towns established within them. During the first stage of expansion of the British Empire (1757-1800), territorial limits of Bengal, Madras and Bombay Presidencies were formalised following the victory of British forces in the Battle of Buxar (1764), the Anglo-Mysore Wars fought between 1767 and 1799, and the First and Second Anglo-Maratha Wars (1775 and 1778) respectively. Only five out of a total of fifty nine present day cantonment towns were established between 1757 and 1800 (Table 2.1 and Map 2.1) in accordance with orders for cantoning troops wherever their strength in the station was more than half a battalion. Initial cantonments were in the form of well laid out tents until the General Order were issued for permanently demarcating military outposts.
Expansion of British Empire (1757-1818)

British acquisition in India
- Before 1800
- 1800-1818

Indian States under British Protection
- Before 1806
- 1806-1818

Source: Collated from Imperial Gazetteer, 1907-09 and Joseph E. Schwartzberg, 1978

Map 2.1
The second stage in expansion during 1801-18 was marked by an extension of the political influence of the British particularly in western and southern India. Three decisive wars, viz. the Third Anglo-Maratha War (1802-04), the Anglo-Gurkha Wars (1814-16) and the Fourth Anglo-Maratha War (1817-18) led to the annexation of upper Doab and terai region in the north and Maratha territories in the west. Expansion in territorial limits was also achieved through the system of ‘subsidiary alliance’ entered with native States. This led to their indirect control through placement of British troops in cantonment towns established in proximity of the native States, e.g. Nasirabad and Mhow were set up near the native States of Ajmer and Indore respectively. As many as nineteen cantonments were set up in ceded and annexed territories during 1801-18.

The third stage in expansion of the British Empire after 1818 recorded the establishment of maximum numbers of cantonments, which included twenty one cantonments set up during 1819-1856, eight after the Mutiny in 1857 and until India’s Independence in 1947. Only two cantonments were established in the post-Independence period, viz. Dehu Road and Babina. This stage was characterised by the consolidation of territories acquired in earlier periods by appending additional territories from the native States through the doctrine of lapse; confiscation of territories on account of maladministration; and subsidiary alliance in lieu of payment of debts by keeping a contingent of the British forces in the territory.

One of the most significant wars fought during the third stage in expansion were the Anglo-Sikh Wars (1845-46 and 1848-49) which resulted in the annexation of Punjab and Sind and led to the formation of several cantonments (which now form a part of Pakistan) in the strategic northwest. Jalandhar Cantonment established in the Bist Doab after the First Anglo-Sikh War in 1846 became an important military outpost in the Punjab. In addition to gaining of administrative control over the entire country, this period was distinguished by the establishment of hill station cantonments mostly in the northwest. These developed as sanatoria and convalescent depot for the British troops and civil administrators stationed in the plains and formed one of the most enduring developments in the urban settlement system in India.
Map 2.3

INDIA
British Empire (1857-1947)

Source: Imperial Gazetteer, 1907-09

Map 2.3
Table 2.2
India: State-wise Distribution of Cantonment Towns (2001)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>States</th>
<th>No. of Cantonment Towns</th>
<th>Per cent Share*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Uttar Pradesh</td>
<td>13</td>
<td>23.93</td>
</tr>
<tr>
<td>2</td>
<td>Uttarakhand</td>
<td>9</td>
<td>6.24</td>
</tr>
<tr>
<td>3</td>
<td>Maharashtra</td>
<td>7</td>
<td>15.94</td>
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<tr>
<td>4</td>
<td>Himachal Pradesh</td>
<td>7</td>
<td>1.48</td>
</tr>
<tr>
<td>5</td>
<td>Madhya Pradesh</td>
<td>5</td>
<td>11.41</td>
</tr>
<tr>
<td>6</td>
<td>Punjab</td>
<td>3</td>
<td>5.38</td>
</tr>
<tr>
<td>7</td>
<td>Tamil Nadu</td>
<td>2</td>
<td>3.04</td>
</tr>
<tr>
<td>8</td>
<td>Jammu &amp; Kashmir</td>
<td>2</td>
<td>2.32</td>
</tr>
<tr>
<td>9</td>
<td>Andhra Pradesh</td>
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</tr>
<tr>
<td>10</td>
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<tr>
<td>19</td>
<td>Kerala</td>
<td>1</td>
<td>0.23</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>59</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Computed from Census of India, 2001
Note: * % Share of cantonment population of State in total population of cantonment towns.

On the other hand, eleven States have only one cantonment town each. The proportion of population in these cantonment towns ranges between 10.04 per cent in Andhra Pradesh and 0.23 per cent in Kerala (Table 2.2). Secunderabad Cantonment in the former is the largest amongst the 59 cantonment towns in India in 2001. The relative concentration of cantonment towns is directly related to the strategic importance of the region. Consequently, a large number of these are located in the States adjoining international borders, particularly in the northwest.

The frontline cantonments in northwest traditionally dominated by infantry regiments form a part of defensive or holding formations. These are followed by small hill station cantonments established at new sites and garrisoned by detachments of infantry regiments. Some of the large cantonments forming a part of strike formations are located next, in the northern plains and usually contain all the three elements of army, viz. infantry, artillery and cavalry. Cantonments in the central parts functioned as cavalry and later as armoured strongholds, while those established inland along the western and southern coastlines evolved into major artillery stations. During the British period these cantonments strengthened the infantry and cavalry troops occupying many forts found in the region. Some of the cantonments also acquired specific functions associated with training establishments, regimental centres, commissariat depots, defence equipment factories etc. Overall, the spatial location of cantonments followed strategic importance of the region and created a tiered structure.
Data Limitations

The trends and patterns of different population attributes that emerged from this study portray a composite rather than specific picture in the absence of disaggregated data for the military and civil area population of cantonment towns. The distinct role of these two segments in shaping the characteristics of population of cantonment towns was at best logically conjectured \textit{vis-à-vis} the overall population size of a cantonment. The latest data according to 2011 Census have not been incorporated since these are not yet available at individual cantonment town level.

General Associations Among Population Attributes

The correlation values for different population attributes in 1961 and 2001 have been given in Tables 2.3 and 2.4 respectively. These show strong (both positive and negative) and highly significant relationships among several attributes, which reflect the functional status of cantonment towns.

Positive associations

The population size of cantonment towns in both 1961 and 2001 was positively related with only one population attribute, i.e. sex ratio. This relationship was not strong (0.2707), but was significant at 0.05 levels in 1961. It strengthened to 0.3546 at 0.01 level of confidence in 2001. This suggests that cantonment towns which have a large population base are more likely than the relatively small sized cantonments to have a balanced sex composition. This is related to availability of adequate accommodation facilities for the families of military personnel and defence related civil staff as well as a large civil area population characterised by family type living.

Both these factors also influenced the association among other population attributes such as sex ratio, female workers and Scheduled Caste population (Tables 2.3 and 2.4). The relationship between sex ratio and female workers was positive, moderately weak (0.3185) and significant at 0.02 level in 1961 but weakened marginally to 0.2888 at increased level of significance (0.01 level) in 2001. This is related with a general improvement in employment avenues for women with their induction in the armed forces particularly in the last two decades and defence related establishments such as ordnance factories and other ancillary establishments.
Sex ratio recorded an interesting association with the proportion of Scheduled Castes, which shifted from negative and an insignificant value in 1961 (-0.0189) to positive (0.3693) and highly significant (at 0.01 levels) in 2001. The strengthening of the relationship in 2001 indicates an increase of civil area population of cantonment towns during 1961-2001 since the Scheduled Caste population is mostly concentrated in the civil areas which have a high component of family type living. The shift towards a positive relationship is also reflective of a general association of high sex ratio with high proportion of Scheduled Castes found in other urban areas as well.

The association of growth of population with other attributes of population in cantonment towns was generally quite unremarkable in 1961, except for positive, moderately weak but highly significant relationship with proportion of total and male workers (Tables 2.3 and 2.4). In 2001, the correlation coefficient declined marginally along with lowering of levels of confidence. On the other hand, the correlation coefficient between growth of population and proportion of total and male literates not only improved marginally but became significant at 0.20 levels of confidence (Tables 2.3 and 2.4). This suggests that the growth of population of cantonment towns was propelled by workers and literates, particularly males as compared to non-workers and illiterates. This in turn, is expected to be related to an increase in military and defence related ancillary establishments.

Some of the strong, positive and highly significant correlation coefficient values were recorded among literates and workers in 1961 and 2001. These relationships not only became stronger in 2001 but continued to be significant at very high levels of confidence (0.01 and 0.001). Among the literates, correlation coefficient values were the strongest positive between proportion of total and male literates (0.9649 in 1961 and 0.9645 in 2001). This is related to a minimum level of educational qualification at the entry level in the armed forces, which ensures a high literacy rate among its working male population. Further, the relationship of female literates with total literates and male literates was found to be strong, positive and highly significant in both 1961 and 2001 (Tables 2.3 and 2.4). These attest to a trickling down effect of male literacy on that of family members of military personnel. Further, provision of educational facilities within cantonments for children of military personnel and civilians is expected to contribute to higher levels of literacy, which is reflected in a strengthening of these relationships with increase in values of correlation coefficient in 2001.
correlation coefficient values were significant at various levels in only five attributes, namely proportion of literates (-0.3661 at 0.01 level), male literates (-0.4130 at 0.01 level), female literates (-0.2291 at 0.10 level), total workers (-0.2985 at 0.05 level) and male workers (-0.2746 at 0.05 level). Large cantonments with relatively large civil areas are associated with larger base of family type living including dependent, non-working population, children as well as elderly, thereby contributing towards negative associations as stated above. Further, the factor of large population base was an outcome of an improvement in the accommodation facilities for the families of military personnel\textsuperscript{16} which, on one hand, contributed towards a negative correlation coefficient value (-0.2132, significant at 0.20 levels) between proportion of female workers and growth of population in 2001, and on the other, it led to marginal weakening of the negative relationship between growth of population and sex ratio (from -0.3158 in 1961 to -0.3047 in 2001), which remained highly significant at 0.02 levels.

In 1961, the Scheduled Castes recorded weak but significant negative relationships with proportion of literates (-0.1693 at 0.20 levels), female literates (-0.2499 at 0.10 levels) and Scheduled Tribes (-0.2304 at 0.10 levels). In 2001, they recorded significant negative correlation coefficient values with all population attributes except sex ratio and proportion of female workers (Tables 2.3 and 2.4). The Scheduled Castes, who are mostly concentrated in the civil area of cantonment towns, recorded negative and significant relationships with proportion of total, male and female literates. This reinforces their traditional associations with low levels of literacy due to their occupations requiring minimal or no formal education. Further, negative correlation coefficient values of the Scheduled Castes with total workers (-0.3284) and male workers (-0.3679) significant at 0.02 and 0.01 levels respectively in 2001 was primarily related to the policy of induction of soldiers and officers in the armed forces on the basis of mental and physical merit rather than a fixed reservation policy, although caste based regiments which derive a large proportion from different Scheduled Castes group continue to form an integral part of the armed forces even today\textsuperscript{17}.

Overall, associations among population attributes in cantonment towns not only reflect the male dominated functioning of these urban settlements, but, the strengthening of some of these relationships in 2001 also implies an undiluted continuation of their basic function of defence. A discussion on each of the population attributes is presented below.
A) Distribution of Large Sized Cantonment Towns (Class I and Class II)

Only one cantonment in northwest, i.e. Ambala was a Class I cantonment town until 1971. Due to an excision of a part of its civil area in late 1970s it lost its Class I status and emerged as a Class III town in 1981 and 1991 and Class II town in 2001 (Maps 2.6 and 2.7). Three cantonments, viz. Secunderabad in south, and Delhi and Kanpur in north comprised Class I category in 2001 (Map 2.7). Together these three constituted a little less than a quarter (21.03 per cent) of the total population of cantonment towns in 2001 (Table 2.5). Of these, Secunderabad (206102 persons) has been a Class I urban settlement since 1981, while Delhi (124917 persons) and Kanpur (100796 persons) were Class II towns since 1961 and 1971 respectively. A relatively high overall growth of population during 1961-2001 led to the emergence of these cantonments at the top of hierarchy of urban settlements.

Class II category cantonment towns recorded a consistent increase in their numbers, from only 5 in 1961 to 12 in 2001 (Table 2.5). Among these, three cantonments (Meerut, Pune and Kirkee) were in this size class even in 1961. This category has singularly recorded maximum proportion (about 40 per cent) of the total population of cantonment towns from 1971 onwards. A majority of Class II cantonments are also physically large in size (more than 20 square kilometres each). The overall rate of growth of population during 1961-2001 in individual cantonments comprising this category, however, has been low to very low. Spatially, these are regionally concentrated in the northwest, north and west where they form clusters of proximally located cantonments. Besides these, two cantonments are located in central India and one in east (Map 2.7).

A large population base in some of the Class I and Class II cantonments is basically related to a relatively long history of settlement of not only the individual cantonments but also of the region in which these are located. In fact, the three Class I cantonments were amongst the early established cantonments. The location of the large sized cantonments near pre-existing urban centres (e.g. Secunderabad, Delhi, Kanpur, Jabalpur, Pune etc.) led to their emergence as important transport nodes, centres for defence related establishments like ordnance factory and depot for manufacturing and supply of defence related goods. In addition, the location of training establishments and regimental centres as well as a high administrative and functional status in the operational hierarchy of army 19 contributed positively to their large population base,
cantonments, viz. Lansdowne (7902 persons) and Sabathu (5719 persons) comprised this category. The change in number was related to a very high growth of population in other cantonments during 1961-2001 due to general strengthening of administrative and functional structure, which led to their shift to Class IV or Class III status.

On the other hand, Class VI cantonment towns were marked by a continuation in 2001 of as many as ten out of fourteen cantonments which formed this category in 1961 (Maps 2.6 and 2.7). This is related to an actual decline in their population during this period. All the ten cantonments are hill station cantonments located in the northwest in Himachal Pradesh and Uttarakhand, except Kannur, which is located in south in Kerala (Map 2.7). They are characterised by a persistently small population base, relatively seasonal character of population and a relatively low strategic functioning which does not warrant deployment of troops in large numbers. Class VI cantonment towns are the smallest in terms of physical expanse, with less than 5 square kilometres under each.

In general, large and medium sized cantonment towns recorded an increase in the number of cantonments comprising individual categories during successive Census years since 1961. However, individual class categories showed a fluctuating trend of increase and decrease in the proportion of population during 1961-2001, with the exception of Class V cantonment towns which recorded a continuous decline since 1961. A majority of the cantonments (35), particularly those located in the north, central and southern parts were elevated to higher population size category; 22 cantonments mostly located in northwest and west continued in the same class category and only 2 cantonments, viz. Ambala and Jhansi declined in the hierarchy.

2. Growth of Population (1901-2001)

A study of growth of population of cantonment towns assumes importance in the light of their basic function, i.e. defence requiring frequent and en mass movement of their male population. Fluctuations in the growth of population, therefore, are an inherent characteristic of cantonment towns. In addition, growth of population of cantonment towns is intricately linked to factors such as restricted areal expansion, lack of diversification of economic activities within the civil areas and regulation of building activities and commercial practices. Together these factors contributed to relatively slow growth of population of cantonment towns in comparison to rapid growth of population in adjoining towns.
The growth of population of cantonment towns recorded fluctuating trends during 1901-2001 (Fig. 2.1). These were intricately linked to *en mass* movement of troops to or from cantonments during operational exigencies, which were distinctly reflected in inverse trends of sex ratio (Fig. 2.1). E.g. a sharp increase in the growth of population of cantonment towns from 4.74 per cent in 1921-31 to 42.88 per cent in 1931-41 led to a decline in their sex ratio from 621 females per thousand males in 1931 to 525 females per thousand males during the same period.

During 1901-2001, the population of cantonment towns increased consistently but at varying rates, with periods of increase interspersed with periods of slow down (Table 2.6 and Fig. 2.1). A sluggish and significantly lower growth of population of cantonment towns was recorded during the pre-Independence period as compared to post-Independence period, a trend quite similar to that of total and urban population in India. The lowest ever growth of population (0.30 per cent) was recorded during 1901-11, whereas the highest growth of population (42.88 per cent) was recorded in the post-Independence period during 1941-51. In fact, this was the only instance during the entire century from 1901 to 2001 when the growth of population of cantonment towns outperformed that of urban population (41.40 per cent). This was related to rebuilding of the Indian army, resettlement of displaced families in the civil areas of cantonment towns after the Partition, and registering of population for the first time in four cantonments, viz. Ramgarh, Yol, Clement Town and Babina.

Another feature of decadal growth of population of cantonment towns was their sharp slow down following high growth rates, i.e. from 42.88 per cent in 1941-51 to 14.64 per cent in 1951-61 and 13.90 per cent in 1961-71; and from 22.96 per cent in 1971-81 to 5.36 per cent in 1981-91. Periods of slow down were primarily related to slow growth of male population which recorded growth rates between 13.85 per cent and 1.05 per cent. In comparison, the female population recorded higher growth rates between 21.37 per cent and 11.32 per cent. The periods of slow down were associated with deployment of troops in their operational areas for Indo-Pak War in 1971 and counter-insurgency operations in several States during 1980s and 1990s.

Individual cantonments recorded varying rates of growth of population during different Census decades which were related to: (i) jurisdictional changes which resulted in inclusion into or excision of areas from cantonments, e.g. Kamptee, St. Thomas Mount, Ambala recorded a decline in their growth of population by -72.54 per cent, -37.51 per
Positive growth of population

During 1951-61 forty one cantonment towns recorded positive growth rates varying between 289.44 per cent in Babina to 0.75 per cent in Meerut. Among these cantonments twenty six had above average (14.64 per cent) growth rates of population. In terms of absolute increase, the population of two cantonments in north India, namely Kanpur and Ambala and one each in central, south and west, viz. Babina, Secunderabad and Deolali respectively increased by over ten thousand persons each.

(i) Cantonment towns with very high growth (more than 35.64 per cent): This category included eleven cantonments, viz. Babina (289.44 per cent), Amritsar (221.74 per cent), Chakrata (148.95 per cent), Shillong (138.60 per cent), Dagshai (92.60 per cent), Badamibagh (56.97 per cent), Nainital (46.03 per cent), Lansdowne (44.40 per cent), Sagar (40.80 per cent), Deolali (37.63 per cent) and Ramgarh (35.64 per cent). Six of these cantonments were small sized, hill station cantonments with a population base of less than ten thousand persons each and located in the northwest, except Shillong which is located in the east. The remaining five were medium sized towns. This category formed a dispersed pattern, but with regional concentrations in the northwest and isolated pockets in the west, east and central India (Map 2.8). Very high growth was propelled by very high female growth rates particularly in Babina, Amritsar, Badamibagh and Ramgarh which seems to be related to an expansion of jurisdiction over adjoining civil pocket in these newly established cantonments except Amritsar; and an increased presence of families in general. Other cantonments recorded a very high growth of male population, expected to be related to military establishments such as training centres.

(ii) Cantonment towns with high growth (between 35.64 and 19.45 per cent): Eleven cantonments recorded high growth of population, which included Jhansi (31.42 per cent), Jalandhar (27.99 per cent), Kanpur (25.85 per cent), Ahmadabad (25.36 per cent), Sabathu (24.41 per cent), Shahjahanpur (23.51 per cent), Secunderabad (23.39 per cent), Roorkee (23.31 per cent), Kirkee (20.48 per cent), Jabalpur (19.84 per cent) and Firozpur (19.45 per cent). This category did not show any association with a specific population size category as it included all the three categories, viz. large, medium and small sized cantonments. Among these, the two large cantonments, Kanpur and Secunderabad grew by more than ten thousand persons each. This category comprised of proximally located, non-contiguous cantonments which formed a small
terms, the decline ranged between 4845 persons in Delhi to 28 persons in Landaur. Negative growth of population formed a distinct cluster of non-contiguously located cantonments in the north and northwest (Map 2.8).

(i) Cantonment towns with very high negative growth (more than -21.08 per cent): Four cantonments located in central, northwest and northern India recorded very high negative growth rates of population. These include Morar (-29.95 per cent), Yol (-23.88 per cent), Faizabad (-22.60 per cent) and Jammu (-21.08 per cent) (Map 2.8). Both male and female population declined in these cantonments, except Jammu which recorded a decline in its male population only (1783 males). Yol recorded a higher decline of females (2663) as compared to males (565). Morar with an overall decline of 2814 persons was merged with its adjoining municipal town of Gwalior and was treated as its outgrowth until 1971.

(ii) Cantonment towns with high negative growth (between -21.08 and -9.59 per cent): The three cantonments which comprised this category are Allahabad (-12.51 per cent), Delhi (-11.93 per cent) and Ahmadnagar (-9.59 per cent). All the three recorded an absolute decline of more than two thousand persons each. Delhi recorded the highest decline of 4845 persons, of which 4372 were males. The case of Ahmadnagar was related to an excision of a part of its civil area as recommended by the Patil Committee set up in 1949 to address the issue of very large civil areas within cantonments 27.

(iii) Cantonment towns with low negative growth (between -9.59 per cent and -1.89 per cent): Four cantonments which formed this category are Almora (-6.71 per cent), Dehradun (-4.44 per cent) and Landaur (-1.98 per cent) in the northwest and Agra (-1.89 per cent) in north (Map 2.8). Almora and Landaur are hill station cantonments which registered a nominal decline of only 43 and 28 persons respectively, while the decline was by 795 persons in Agra and 1235 persons in Dehradun.

(iv) Cantonment towns with very low negative growth (less than -1.89 per cent): Very low negative growth was recorded two cantonments, viz. Bareilly (-1.48 per cent) and Nasirabad (-1.46 per cent). In absolute terms, the decline was quite less of 199 and 356 persons respectively. The decline in population in Bareilly comprised only male population, whereas Nasirabad recorded a decline in both male and female population by 27 and 329 respectively.

69
populations during 1991-2001. Among these, Secunderabad added the maximum population (34954 persons) which included highest number of females (23369) amongst all cantonments both in this category as well as overall. In fact, above average growth rates of both male and female population were recorded by all the cantonments, except Babina, which registered a marginal decline of 430 females (by -3.78 per cent). High growth of population was attributed to a large civil area population, manufacturing units particularly those related with defence equipments, ordnance factories and depots, and location of defence related establishments, training schools and regimental centres.

(iii) Cantonment towns with low growth (between 15.70 and 8.63 per cent): Twelve cantonments which form this category are Nainital (14.99 per cent), Varanasi (14.43 per cent), Deolali (14.19 per cent), Kasauli (13.80 per cent), Ranikhet (12.93 per cent), Pachmarhi (12.76 per cent), Dalhousie (12.61 per cent), Landaur (11.94 per cent), Shillong (11.92 per cent), Lansdowne (11.20 per cent), Barrackpur (10.59 per cent) and Firozpur (8.63 per cent). This category formed a regional cluster in the northwest comprising small sized hill station cantonments, most of which being low in the functional hierarchy of army structure continued to be in the same population size category as in 1961. The remaining cantonments are located in east, west and central India (Map 2.9). All the cantonments in this category recorded below average growth rates of male (17.77 per cent) and female (12.39 per cent) population. In fact, negative growth of male population was recorded in Nainital and of female population in Firozpur and Dalhousie.

(iv) Cantonment towns with very low growth (less than 8.63 per cent): Ten cantonments which comprised this category are Shahjahanpur (7.80 per cent), Almora (7.51 per cent), Clement Town (7.30 per cent), Kamptee (7.28 per cent), Kanpur (6.08 per cent), St. Thomas Mount (6.06 per cent), Bareilly (5.05 per cent), Fatehgarh (3.56 per cent), Agra (2.44 per cent) and Wellington (2.29 per cent). This category formed distinct cluster of eight almost contiguously located cantonments in the north and are adjacent to those with very high growth rates. Two cantonments are in south and one is in central India (Map 2.9). A majority of the cantonments in this category were medium sized, had a fairly large civil area segment and were associated with training establishments, but had a low functional status, except Bareilly which is a Divisional Headquarters.
Negative growth of population

Twelve cantonments registered a decline in their population during 1991-2001, which ranged between -39.44 per cent in Bakloh and -0.73 in Belgaum. Numerically, the largest decline was recorded in Allahabad (13923 persons) and the lowest of 121 persons in Kannur. The cantonments with negative growth formed a distinct cluster comprising four cantonments in the west. The remaining cantonments were spatially dispersed, with two each in north, northwest, central and south India (Map 2.9).

(i) Cantonment towns with very high negative growth (between -39.44 and -20.95 per cent): Four cantonments recorded very high negative growth, namely Bakloh (-39.44 per cent), Allahabad (-36.58 per cent), Chakrata (-25.14 per cent) and Jhansi (-20.95 per cent). Two of these are located in the northwest and one each in north and central India forming dispersed pattern (Map 2.9). Except Chakrata, the other three cantonments recorded a decline in both male and female population. Allahabad recorded the highest decline of 13923 persons which included 9548 males and 4375 females. This was related to a possible excision of a part of its civil area in 2001 as indicated from a marginal decline in its area from 18.31 square kilometres in 1991 to 17.86 square kilometres in 2001.

(ii) Cantonment towns with high negative growth (between -20.95 and -2.65 per cent): Three cantonments comprised this category, viz. Sagar (-16.97 per cent), Meerut (-3.20 per cent) and Pune (-2.65 per cent). These formed a dispersed pattern in north, west and central India (Map 2.9). The highest numerical decline was recorded by Sagar (6303 persons). Pune recorded a decline in its male population only whereas the other two cantonments recorded a decline in both male and female population.

(iii) Cantonment towns with low negative growth (between -2.65 per cent and -1.09 per cent): This category comprised of four cantonments, namely, Kannur (-2.51 per cent), Ahmadnagar (-2.00 per cent), Aurangabad (-1.36 per cent) and Kirkee (-1.09 per cent). Spatially, this category formed a distinct cluster in the west with three cantonments and only one in south (Map 2.9). Among these cantonments, both male and female population declined in Kirkee, whereas only male population declined in Aurangabad and only females in the remaining two. Though numerically nominal, the overall decline was highest in Ahmadnagar by 815 persons.
accommodation facilities within the cantonment for both officers and troops, the sex ratio continued to remain low until provisions for housing improved.

Table 2.7
India: Sex Ratio of Cantonment Towns and Urban India (1901-2001)

<table>
<thead>
<tr>
<th>Census Years</th>
<th>Cantonment Towns</th>
<th>Urban India</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sex Ratio</td>
<td>Change in Sex Ratio</td>
</tr>
<tr>
<td>1901</td>
<td>668</td>
<td>-</td>
</tr>
<tr>
<td>1911</td>
<td>586</td>
<td>-82</td>
</tr>
<tr>
<td>1921</td>
<td>572</td>
<td>-14</td>
</tr>
<tr>
<td>1931</td>
<td>621</td>
<td>49</td>
</tr>
<tr>
<td>1941</td>
<td>525</td>
<td>-96</td>
</tr>
<tr>
<td>1951</td>
<td>657</td>
<td>132</td>
</tr>
<tr>
<td>1961</td>
<td>668</td>
<td>11</td>
</tr>
<tr>
<td>1971</td>
<td>745</td>
<td>77</td>
</tr>
<tr>
<td>1981</td>
<td>724</td>
<td>-21</td>
</tr>
<tr>
<td>1991</td>
<td>798</td>
<td>74</td>
</tr>
<tr>
<td>2001</td>
<td>761</td>
<td>-37</td>
</tr>
<tr>
<td>Change (1901-2001)</td>
<td>93</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Computed from Census of India, Union Primary Census Abstract, 1961-2001
Note: Urban figures exclude population figures of cantonment towns
Sex ratio is in number of females per thousand males
During 1961-2001 the sex ratio of cantonment towns recorded an improvement by 93 females per thousand males and that of urban India by 54 females per thousand males.

The sex ratio of cantonment towns consistently remained much lower than the national urban sex ratio and recorded a fluctuating trend with periods of decline alternating with periods of improvement during 1901-2001 (Table 2.7). The oscillations in sex ratio of cantonment towns are largely attributable to the movement of troops to and from cantonments. The overall change in sex ratio during the same period showed a net increase of 93 females per thousand males in cantonment towns, from 668 females per thousand males in 1901 to 761 females per thousand males in 2001 as compared to a decline by 14 females per thousand males in urban India.

During 1901-2001, the sex ratio of cantonment towns remained depressed in the pre-Independence as compared to post-Independence period (Table 2.7). All the decades during pre-Independence period recorded a decline in sex ratio with the exception of 1921-31 when it improved by 49 females per thousand males. The lowest sex ratio of 525 females per thousand males was recorded in 1941 which corresponded with the highest decline in sex ratio by 96 females per thousand males. This was related to troop induction during World War II and was evident in higher growth of males (37.16 per cent) as compared to females (16.04 per cent) in cantonment towns.

Further, sex ratio improved by the highest margin of 132 females per thousand males during 1941-51 and a majority of the cantonments (39) recorded an improvement in their sex ratios. This was associated with the resettlement of displaced families in the
training and recruitment centres etc. comprised a significant strength of combatant component which contributed to low sex ratio. Further, large cantonments favoured larger family presence due to better accommodation facilities and significant civil area population which contributed to relatively high sex ratio.

A) Spatial Pattern of Sex Ratio (1961)

The sex ratio of cantonment towns was 668 females per thousand males in 1961. It varied between 954 females per thousand males in St. Thomas Mount and 222 females per thousand males in Roorkee and as many as twenty seven cantonments recorded above average sex ratio. The average sex ratio was markedly lower than the national urban sex ratio of 845 females per thousand males. In fact, only five cantonments recorded sex ratios above the national urban average, namely St. Thomas Mount (954), Kannur (923), Pune (868), Aurangabad (862) and Jammu (849). The spatial pattern of sex ratio revealed similarity with regional pattern of national urban sex ratio, viz. high sex ratios were characteristic of cantonments located in southern, western and central India, whereas low and very low sex ratios were recorded in north and northwest. Cantonment towns have been divided into four different categories on the basis of their sex ratios (Map 2.10):

(i) Cantonment towns with very high sex ratio (more than 766 females per thousand males)
(ii) Cantonment towns with high sex ratio (between 766 and 606 females per thousand males)
(iii) Cantonment towns with low sex ratio (between 606 and 532 females per thousand males)
(iv) Cantonment towns with very low sex ratio (less than 532 females per thousand males)

(i) Cantonment towns with very high sex ratio (more than 766 females per thousand males): Fifteen cantonments recorded very high sex ratio which ranged between 954 females per thousand males in St. Thomas Mount and 766 females per thousand males in Secunderabad. The other cantonments in this category included Kannur (923), Pune (868), Aurangabad (862), Jammu (849), Belgaum (827), Kamptee (822), Sagar (815), Varanasi (815), Mhow (814), Nasirabad (779), Shahjahanpur (778), Wellington (774) and Badamibagh (772). Spatially these are widely located, but with a
Dalhousie (319), Chakrata (225) and Roorkee (222). Ten cantonments among these formed a distinct cluster in northwest. Of the remaining four, two are in the north and one each in east and west (Map 2.10). In general, this category comprised of cantonments which have historically been associated with depressed sex ratios due to a small population base and limited facilities for permanent family accommodation, particularly in the seven hill station cantonments.

B) Spatial Pattern of Sex Ratio (2001)

In 2001, cantonment towns recorded a sex ratio of 761 females per thousand males. Twenty five cantonments recorded above average sex ratio. The highest and lowest sex ratios were recorded in Secunderabad (975 females per thousand males) and Roorkee (410 females per thousand males) respectively. The sex ratio of cantonment towns continued to be distinctly lower than the national urban average of 900 females per thousand males in 2001, except for six cantonments located in regions of traditionally high sex ratio in south and west, viz. Secunderabad, St. Thomas Mount, Pune, Aurangabad, Sagar and Yol. Sex ratio in some of the cantonments was even higher as compared to their adjoining municipal cities.  

Broadly, the pattern of sex ratio in 2001 was similar to the one in 1961 since twenty three cantonments remained in the same category as in the base year. However, low sex ratio in cantonment towns located in the northwest and north India was quite conspicuous given the heightened strategic importance of regions along the western border and consequently, a marked presence of male population. Very high and high sex ratios tended to shift north and southwards since 1961.

On the basis of sex ratios in 2001, cantonment towns have been grouped into four different categories (Map 2.11):

(i) Cantonment towns with very high sex ratio (more than 814 females per thousand males)
(ii) Cantonment towns with high sex ratio (between 814 and 716 females per thousand males)
(iii) Cantonment towns with low sex ratio (between 716 and 643 females per thousand males)
(iv) Cantonment towns with very low sex ratio (less than 643 females per thousand males)
(iii) Cantonment towns with low sex ratio (between 716 and 643 females per thousand males): This category included fifteen cantonments, viz. Varanasi (715), Dehradun (713), Jalandhar (699), Belgaum (691), Morar (696), Jabalpur (683), Firozpur (673), Mathura (668), Ahmadabad (666), Fatehgarh (664), Ambala (659), Ranikhet (652), Delhi (647), Jammu (645) and Badamibagh (643). Low sex ratio category formed a large cluster in northwest and radiated towards central India, with isolated pockets in the west and south (Map 2.11). Despite many of the cantonments in this category being fairly large sized in 2001, their sex ratio was low. This is related to a comparatively high proportion of male population comprising combatants in the cantonments located in proximity of international border in the northwest and discernible in a shift to low sex ratio category in cantonments like Jammu, Badamibagh and Ambala. On the other hand, four cantonments, viz. Jalandhar and Firozpur in the northwest, Delhi in the north and Jabalpur in central India continued to remain in the low sex ratio category.

(iv) Cantonment towns with very low sex ratio (less than 643 females per thousand males): Fourteen cantonments with very low sex ratio included Chakrata (617), Bareilly (608), Dagshai (605), Babina (597), Amritsar (596), Ahmadnagar (585), Kamptee (575), Lansdowne (565), Kannur (528), Faizabad (503), Sabathu (502), Jutogh (463), Almora (449) and Roorkee (410). Cantonments in this category are locationally dispersed, except for a small cluster of hill station cantonments in northwest. The other cantonments are located adjacent to those with very high or high sex ratio in west and central India (Map 2.11). Very low sex ratio was related to a small population base including the civil area, especially in the hill station cantonments in the northwest, as well as the location of regimental centres which contributed to an overwhelming presence of male population (up to 71 per cent) in the total population. Cantonment towns, to a certain extent, reflected regional characteristics of sex ratio observable in the country, with those in south and west recording better gender equilibrium than the cantonments in north and northwest in both 1961 and 2001.

4. Literacy (1961-2001)

Literacy is one the most potent factors determining socio-economic growth of a society and affects the nature of interface between society and its social-cultural-political environment. Literacy is considered as a significant indicator of the quality of
## Table 2.8
India: Literate Population in Cantonment Towns and Urban India (1961-2001)

<table>
<thead>
<tr>
<th>Census Years</th>
<th>Cantonment Towns</th>
<th></th>
<th></th>
<th>Urban India</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Literates</td>
<td>Proportion</td>
<td>Percentile Change</td>
<td>Literates</td>
<td>Proportion</td>
<td>Percentile Change</td>
</tr>
<tr>
<td>1961</td>
<td>669536</td>
<td>55.52</td>
<td>-</td>
<td>36406791</td>
<td>46.84</td>
<td>-</td>
</tr>
<tr>
<td>1971</td>
<td>786056 (17.40)</td>
<td>57.23</td>
<td>1.71</td>
<td>56422639 (54.98)</td>
<td>52.38</td>
<td>5.54</td>
</tr>
<tr>
<td>1981</td>
<td>1083625 (37.86)</td>
<td>64.16</td>
<td>6.93</td>
<td>89431360 (58.50)</td>
<td>57.23</td>
<td>4.95</td>
</tr>
<tr>
<td>1991</td>
<td>1188632 (9.69)</td>
<td>66.80</td>
<td>2.67</td>
<td>131951698 (47.55)</td>
<td>61.66</td>
<td>4.33</td>
</tr>
<tr>
<td>2001</td>
<td>1538054 (28.56)</td>
<td>74.42</td>
<td>7.62</td>
<td>197288926 (49.52)</td>
<td>69.45</td>
<td>7.79</td>
</tr>
<tr>
<td>Change (1961-2001)</td>
<td>858518 (128.23)</td>
<td>-</td>
<td>18.90</td>
<td>160882135 (441.90)</td>
<td>-</td>
<td>22.61</td>
</tr>
</tbody>
</table>

*Source: Computed from Census of India, Union Primary Census Abstract, 1961 to 2001*

*Note: Urban figures exclude population figures of cantonment towns
Figures in parentheses represent growth rate in per cent
Proportion of literates is in per cent and calculated from total population
Percentile change is in per cent points.*

## Table 2.9
India: Male Literate Population in Cantonment Towns and Urban India (1961-2001)

<table>
<thead>
<tr>
<th>Census Years</th>
<th>Cantonment Towns</th>
<th></th>
<th></th>
<th>Urban India</th>
<th></th>
<th></th>
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<tr>
<td></td>
<td>Male Literates</td>
<td>Proportion</td>
<td>Percentile Change</td>
<td>Male Literates</td>
<td>Proportion</td>
<td>Percentile Change</td>
</tr>
<tr>
<td>1961</td>
<td>483526</td>
<td>66.88</td>
<td>-</td>
<td>24177876</td>
<td>57.33</td>
<td>-</td>
</tr>
<tr>
<td>1971</td>
<td>527335 (9.06)</td>
<td>66.98</td>
<td>0.10</td>
<td>35452316 (47.00)</td>
<td>61.20</td>
<td>3.87</td>
</tr>
<tr>
<td>1981</td>
<td>720738 (36.67)</td>
<td>73.57</td>
<td>6.59</td>
<td>54498616 (53.72)</td>
<td>65.74</td>
<td>4.54</td>
</tr>
<tr>
<td>1991</td>
<td>732389 (1.61)</td>
<td>73.99</td>
<td>0.42</td>
<td>77582967 (42.36)</td>
<td>68.69</td>
<td>2.95</td>
</tr>
<tr>
<td>2001</td>
<td>933868 (27.49)</td>
<td>80.09</td>
<td>6.10</td>
<td>112048341 (44.42)</td>
<td>75.00</td>
<td>6.32</td>
</tr>
<tr>
<td>Change (1961-2001)</td>
<td>450160</td>
<td>(93.10)</td>
<td>-</td>
<td>87930465 (364.59)</td>
<td>-</td>
<td>17.67</td>
</tr>
</tbody>
</table>

*Source: Computed from Census of India, Union Primary Census Abstract, 1961 to 2001*

*Note: Urban figures exclude population figures of cantonment towns
Figures in parentheses represent growth rate in per cent
Proportion of male literates is in per cent and calculated from total male population
Percentile change is in per cent points.*

## Table 2.10
India: Female Literate Population in Cantonment Towns and Urban India (1961-2001)

<table>
<thead>
<tr>
<th>Census Years</th>
<th>Cantonment Towns</th>
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<th></th>
<th>Urban India</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Female Literates</td>
<td>Proportion</td>
<td>Percentile Change</td>
<td>Female Literates</td>
<td>Proportion</td>
<td>Percentile Change</td>
</tr>
<tr>
<td>1961</td>
<td>186010</td>
<td>38.51</td>
<td>-</td>
<td>12288015</td>
<td>34.46</td>
<td>-</td>
</tr>
<tr>
<td>1971</td>
<td>258721 (39.08)</td>
<td>44.13</td>
<td>5.62</td>
<td>20970323 (70.64)</td>
<td>42.12</td>
<td>7.66</td>
</tr>
<tr>
<td>1981</td>
<td>362887 (40.26)</td>
<td>51.16</td>
<td>7.03</td>
<td>34932744 (66.58)</td>
<td>47.79</td>
<td>5.67</td>
</tr>
<tr>
<td>1991</td>
<td>456243 (25.72)</td>
<td>57.79</td>
<td>6.63</td>
<td>54360873 (55.64)</td>
<td>53.81</td>
<td>6.02</td>
</tr>
<tr>
<td>2001</td>
<td>593436 (30.27)</td>
<td>66.98</td>
<td>9.19</td>
<td>85248349 (56.78)</td>
<td>63.29</td>
<td>9.49</td>
</tr>
<tr>
<td>Change (1961-2001)</td>
<td>408358 (219.53)</td>
<td>-</td>
<td>28.47</td>
<td>72951433 (593.64)</td>
<td>-</td>
<td>28.83</td>
</tr>
</tbody>
</table>

*Source: Computed from Census of India, Union Primary Census Abstract, 1961 to 2001*

*Note: Urban figures exclude population figures of cantonment towns
Figures in parentheses represent growth rate in per cent
Proportion of female literates is in per cent and calculated from total female population
Percentile change is in per cent points.*

A sizeable proportion of the total population in cantonment towns was recorded as literate, viz. 55.32 per cent, 57.23 per cent, 64.16 per cent, 66.80 per cent and 74.42 per cent in successive decades during 1961-2001 (Table 2.8). Literacy rates among males
matching that of the national urban average, i.e. 28.83 per cent points during the same period. Also, the percentile change in female literacy rate of cantonment towns during different Census decades was significant as compared to the total and male literacy rates. The 1971-81 decade stands out distinctly as more than half the female population (51.16 per cent) of cantonment towns was recorded as literate the first time. The halfway mark was achieved one decade earlier than the urban female literate population in India (Table 2.10) and was due to the highest ever growth of female literates (40.26 per cent) during 1971-81.

An analysis of literacy rates among individual cantonments during 1961-2001 revealed that several cantonments persistently recorded below cantonment towns’ average proportion of total, male and female literacy during 1961-2001. This is associated with their large civil areas which reflect the regional characteristics of literacy in these cantonments. The trends in proportion of total and male literacy showed fluctuations in a majority of cantonments in the intervening decades during 1961-2001, with a consistent increase in eight and two cantonments respectively which were associated with training establishments, regimental centres etc. In comparison, a continuous improvement in female literacy rates was recorded in a majority of the cantonments (46). Further, all the cantonments registered positive overall percentile change in their total, male and female literacy rates, except Dalhousie which recorded a decline in the proportion of male literates by 2.68 per cent points (from 81.14 per cent in 1961 to 78.46 per cent in 2001).

A) Spatial Pattern of Distribution of Literacy Rate (1961)

In 1961 as many as 669536 persons were enumerated as literate in cantonment towns, which included 483526 males and 186010 females. The total literacy rate of cantonment towns was 55.32 per cent whereas its male and female literacy rates were 66.88 per cent and 38.51 per cent respectively. Roorkee recorded the highest total and male literacy rates of 73.99 per cent and 81.39 per cent respectively, while Jammu recorded the lowest rates, viz. 28.12 per cent and 33.70 per cent. In the case of female literacy rates, Nainital with 62.37 per cent and Morar with 15.13 per cent were on either ends. Broadly, the spatial pattern of total, male and female literacy rates in cantonment towns showed regional characteristics with higher literacy rates in the northwest, west and southern India as compared to those in north, east and central India (Maps 2.12, 2.13 and 2.14). These were marked by a gradation from high to very low in an axial
High literacy rates in medium and large sized cantonments in this category were associated with a significant component of military personnel particularly in the strategically located cantonments in the northwest as well as those located in the west and having defence establishments. This was reflected in a high proportion of male literacy rates, which ranged between 73.98 per cent and 65.64 per cent in most of the cantonments of this category (Map 2.13). Further, the location of these cantonments adjacent to large cities, in regions of high urbanization characterised by relatively high literacy rates were additional factors for their high levels of literacy in general and of females in particular. Female literacy rates in these cantonments varied between very high, i.e. 52.90 per cent to a low of 32.61 per cent (Map 2.14).

(iii) Cantonment towns with low literacy rate (between 51.47 and 55.81 per cent):
Fifteen cantonments which formed this category are Lucknow (55.67 per cent), Wellington (55.40 per cent), Meerut (55.23 per cent), Dehradun (55.96 per cent), Agra (54.93 per cent), Faizabad (54.71 per cent), Ahmadnagar (54.41 per cent), Varanasi (53.25 per cent), Ambala (52.97 per cent), Mhow (52.96 per cent), Bareilly (52.88 per cent), Kamptee (52.71 per cent), Shahjahanpur (52.37 per cent), Ahmadabad (52.11 per cent) and Pachmarhi (51.47 per cent). Spatially, this category formed a linear pattern across north and northwest India, and isolated patches in west, south and central India (Map 2.12). The cantonments in this category were mostly characterised by relatively low male literacy rates (between 68.94 per cent and 61.54 per cent) but varying female literacy rates, which ranged from high to low, viz. between 43.19 per cent and 31.25 per cent (Maps 2.13 and 2.14). Low literacy rates in these cantonments were associated with their large population base which included a significant civilian population and above cantonment towns’ average proportion (12.47 per cent) of Scheduled Castes.

(iv) Cantonment towns with very low literacy rate (less than 51.47 per cent): This category included fourteen cantonments, namely, Landaur (51.12 per cent), Aurangabad (50.63 per cent), Yol (50.35 per cent), Dinapur (50.01 per cent), Babina (47.10 per cent), Fatehgarh (47.03 per cent), Ramgarh (46.47 per cent), Nasirabad (45.71 per cent), Kanpur (45.55 per cent), Sagar (44.70 per cent), Clement Town (43.99 per cent), Morar (37.42 per cent), Badamibagh (31.43 per cent) and Jammu (28.12 per cent). Regional concentration of very low literacy rates was found in cantonments in northwest, north, east and central India. These cantonments along with the cantonments which recorded low literacy rates formed an almost continuous belt across northwest,
Jabalpur (82.07 per cent), Nainital (81.58 per cent), Kamptee (81.32 per cent), Ranikhet (81.30 per cent), Dagshai (81.16 per cent), Wellington (81.01 per cent) and Kasauli (80.10 per cent). This category was highly concentrated in the northwest with almost contiguously located eight hill station cantonments forming a cluster each in Himachal Pradesh and Uttaranchal. Three smaller pockets of proximally located cantonments in central, west and southern India were also identifiable (Map 2.15).

Many cantonments located in the northwest continued to record very high literacy rate since 1961 due to their persistent small population base. Some of the large and medium sized cantonments in south, west and central India, which are associated with defence related establishments, training and regimental centres and comparatively large civil areas also recorded very high total, male and female literacy rates (Maps 2.15, 2.16 and 2.17). Regional factors which contributed towards such a pattern include long history of education associated with an influence of Christian missionaries as well as good educational infrastructure, particularly in the cantonments in south and west.

(ii) Cantonment towns with high literacy rate (between 76.46 and 80.10 per cent):
This category included fifteen cantonments, viz. Jalandhar (80.03 per cent), Ahmadabad (79.82 per cent), Amritsar (79.79 per cent), Dehradun (79.35 per cent), Barrackpur (78.82 per cent), Kirkee (78.41 per cent), Ambala (77.91 per cent), Belgaum (77.85 per cent), St. Thomas Mount (77.51 per cent), Almora (77.09 per cent), Bareilly (77.00 per cent), Mathura (76.82 per cent), Deolali (76.75 per cent), Yol (76.71 per cent) and Landaur (76.46 per cent). This category was spatially contiguous with cantonments with very high literacy rates in the northwest and west where they formed distinct clusters. Cantonments located in the north, east, west and south also formed a part of this category (Map 2.15).

High literacy rates in these cantonments were associated with large military component, training establishments and regimental centres particularly in some of the medium and large sized, strategically located cantonments in the northwest. This is also discernible form very high male literacy rates recorded by the cantonments in this category (Map 2.16). The location of these cantonments in areas of rapid urbanization, adjoining large cities and a tradition of high literacy levels also contributed towards their very high female literacy rates (Map 2.17).
5. Workers (1961-2001)

The segment of population which is engaged in an economically gainful activity, involving physical or mental labour has been termed as workers by the Census of India. This is variously known as the labour force, economically active population, working population. According to the Census of India, workers include both main and marginal workers, i.e. those who are engaged in an economically remunerative activity for more than or less than 180 days a year respectively.

The size of workforce is directly related to the total population base as well as the age structure of the population. A large population base and relatively higher proportion of the adult population would increase the number of workers. In the case of urban areas in particular, factors such as education and the nature of economic functioning also affect the size of work force. The former causes a delay in the entry of people in the working force since acquisition of education is a relatively long drawn process. The latter determines the availability of jobs as some would require pre-determined skill sets as compared to the others. A study of the workforce gives an insight into the social and economic functioning of settlements.

The basic function of cantonment towns, i.e. defence has influenced the composition of its workforce, which comprises of defence personnel, their associated supporting civilian staff and the civilians who carry on retail trade from within the civil area or bazaar section of a cantonment. The highly male dominated nature of function of cantonment towns resulted in an overwhelming dominance of males in their workforce with the proportion of males as high as 88.53 per cent in the total workers in 2001 and that of female workers being 11.47 per cent. The gender-wise work participation rate revealed that a large proportion of the male population (between 76 and 42 per cent) and a very low proportion of female population (between 18 and 3 per cent) of cantonment towns were involved in some economic activity. In addition to the male dominated function of defence, very low proportions of female workers in cantonment towns are related to: (i) limited scope for gainful employment in trade and commerce oriented economic functioning of civil areas within cantonments; (ii) non permanent status of residence of families of military personnel in a specific cantonment restricts employment opportunities in adjoining urban centres. Thus, the proportion of female workers in cantonment towns has continued to be low by at least two per cent points as compared to their adjoining cities.

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Table 2.13
India: Female Workers in Cantonment Towns and Urban India
(1961-2001)

<table>
<thead>
<tr>
<th>Census Years</th>
<th>Cantonment Towns</th>
<th>Urban India</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female Workers</td>
<td>Proportion</td>
</tr>
<tr>
<td>1961</td>
<td>29654</td>
<td>6.14</td>
</tr>
<tr>
<td>1971</td>
<td>28253 (-4.72)</td>
<td>4.82</td>
</tr>
<tr>
<td>1981</td>
<td>42363 (49.94)</td>
<td>5.97</td>
</tr>
<tr>
<td>1991</td>
<td>55621 (31.30)</td>
<td>7.04</td>
</tr>
<tr>
<td>2001</td>
<td>84461 (51.85)</td>
<td>9.52</td>
</tr>
<tr>
<td>Change (1961-2001)</td>
<td>54807 (184.82)</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Computed from Census of India, Union Primary Census Abstract, 1961 to 2001
Note: Urban figures exclude population figures of cantonment towns
Figures in parentheses represent growth rate in per cent
Proportion of female workers is in per cent and calculated from total female population
Percentile change is in per cent points.

The proportion of total and male workers in cantonment towns has consistently remained higher than the national urban average whereas the proportion of female workers always remained lower than the national urban average during 1961-2001 (Tables 2.11, 2.12 and 2.13). The proportion of total and male workers in cantonment towns recorded an overall decline by 2.36 per cent points and 3.70 per cent points respectively and an increase in proportion of female workers by 3.38 per cent points. These changes were higher as compared to their respective urban percentile changes during 1961-2001. The decline in proportions were related to changes in the concept of workers, but mostly to an increase in the non-working and dependent population due to an increase in accommodation facilities for families of defence personnel, and an increase in the civil area population. In addition, restricted economic base of cantonment towns as compared to greater employment opportunities in a variety of occupations in urban areas contributed to their slow and significantly lower overall growth of total, male and female workers.

Fig. 2.3: Cantonment Towns: Trends in Proportion of Workers
(1961-2001)
the decadal trends in the proportion of total, male and female workers in individual cantonments were marked by an increase in proportion interspersed with decline. Consistent improvements in proportion of total and male workers were recorded in Belgaum and Kannur, and that of female workers in Lansdowne, Dehradun, Meerut and Kirkee. On the other hand, continuously declining trends in total and male workers were recorded in three cantonments, viz. Allahabad, Ranikhet and Secunderabad during 1961-2001, and that of female workers in Dinapur and Varanasi during 1961-1991; (iii) eight cantonments, mostly located in east and central India recorded an overall decline in their proportions of total, male and female workers during 1961-2001 which was related to a significant increase in their non-workers population associated with an expansion of their military and civil area population base.

A) Spatial Pattern of Distribution of Total Workers (1961)

As many as 466178 persons in cantonment towns were designated as workers in 1961 which included an overwhelming number (436524) and proportion of males (93.64 per cent). The remaining 28253 (6.36 per cent) were female workers. The total workers formed 38.66 per cent of the total population of cantonment towns, but their proportion varied between 71.39 per cent in Roorkee and 26.08 per cent in Aurangabad. Gender-wise workforce showed that the proportion of male workers in cantonment towns was 60.38 per cent of the total male population in 1961, which varied between 86.75 per cent in Roorkee and 36.85 per cent in Kannur. On the other hand, only 6.14 per cent of the total females in cantonment towns were classified as workers in 1961 and their proportion ranged between 17.59 per cent in Sagar and 0.31 per cent in Badamibagh.

Broadly, the spatial pattern of total workers showed concentration of very high and high proportion in cantonments in the northwest, north and central India (Map 2.18) which is associated with very high proportion of male workers due to the strategic importance of these regions (Map 2.19). Those located in west, south and east were characterised by low to very low proportion of total workers but very high to high proportion of female workers (Map 2.20).

On the basis of the proportion of total workers in cantonments in 1961, four categories of cantonment towns can be identified (Map 2.18):

(i) Cantonment towns with very high proportion of total workers (more than 46.97 per cent)
(iii) Cantonment towns with low proportion of total workers (between 39.81 and 34.45 per cent): This category was formed by fifteen cantonments, namely Fatehgarh (39.39 per cent), Pachmarhi (39.33 per cent), Bareilly (38.52 per cent), Wellington (37.94 per cent), Sagar (37.59 per cent), Secunderabad (37.06 per cent), Ahmadnagar (35.98 per cent), Kamptee (36.19 per cent), Dinapur (35.99 per cent), Ahmadabad (35.98 per cent), Kirkee (35.24 per cent), Agra (34.88 per cent), Barrackpur (34.70 per cent), Kanpur (34.68 per cent) and Dehradun (34.45 per cent). The cantonments comprising this category although were widely located across the country, but formed small clusters in the north and west and a distinct axial pattern from north to south through central India (Map 2.18).

Some of the large and medium sized cantonments in this category recorded a significant strength of total workers associated with defence establishments such as ordnance factories, supply depots as well as training centres. But the low proportion of total workers was attributed to their large base of dependent and non-working population in their military and civil areas. In most of these cantonments the proportion of male workers was low, whereas female workers reflected their regional characteristics of relatively high proportion (Maps 2.19 and 2.20).

(iv) Cantonment towns with very low proportion of total workers (less than 34.45 per cent): This category included fourteen cantonments, viz. Meerut (34.32 per cent), Ambala (34.17 per cent), Nasirabad (33.42 per cent), Varanasi (31.81 per cent), Pune (30.46 per cent), Almora (30.10 per cent), Mhow (29.74 per cent), Shahjahanpur (29.50 per cent), Badamibagh (29.37 per cent), St. Thomas Mount (28.88 per cent), Jammu (28.72 per cent), Belgaum (27.81 per cent), Kannur (26.76 per cent) and Aurangabad (26.08 per cent). This category formed a linear pattern of non-contiguous cantonments across the length of the country from northwest, west and up to south (Map 2.18).

Medium and large sized cantonments with large civil area population, oriented to family type living contributed to very low proportion of total workers. Cantonments located in west and south were characterised by very low proportion of male workers whereas those in the northwest recorded a high proportion of male workers due to the combatant component forming a large part of the male population (Map 2.19). The reverse was true of the spatial association of proportion of female workers (Map 2.20).
(iii) Cantonment towns with low proportion of total workers (between 37.24 and 32.93 per cent)

(iv) Cantonment towns with very low proportion of total workers (less than 32.93 per cent)

(i) Cantonment towns with very high proportion of total workers (more than 42.14 per cent): This category comprised of fifteen cantonments, viz. Kannur (54.86 per cent), Jutogh (53.47 per cent), Roorkee (53.42 per cent), Almora (52.86 per cent), Dagshai (49.82 per cent), Faizabad (49.73 per cent), Kamptee (48.24 per cent), Badamibagh (46.91 per cent), Ahmadnagar (45.86 per cent), Sabathu (45.85 per cent), Amritsar (44.92 per cent), Lansdowne (43.07 per cent), Babina (43.04 per cent), Kasauli (42.89 per cent) and Delhi (42.14 per cent). The spatial pattern of very high proportion of total workers showed small clusters of contiguously located cantonments in the northwest and isolated ones in central, west and south (Map 2.21).

The small population base of several hill station cantonments in the northwest contributed to a very high proportion of total workers, mostly comprising males. Among the other cantonments, Delhi was the largest with a significant military population associated with training establishments, regimental centres and its functional status as the headquarters of the three wings of the armed forces. This is most evident in a high proportion of male workers (Map 2.22). Further, its fairly large civil area population and location in a highly urbanized region contributed to a high proportion of female workers (Map 2.23). A similar pattern of high and very high proportion of female workers was also distinct in medium sized cantonments, viz. Kamptee, Badamibagh, Ahmadnagar and Amritsar.

(ii) Cantonment towns with high proportion of total workers (between 42.14 and 37.24 per cent): A high proportion of total workers was recorded in fifteen cantonments, viz. Jammu (42.10 per cent), Wellington (42.10 per cent), Ahmadabad (42.01 per cent), Chakrata (41.50 per cent), Bareilly (41.25 per cent), Ambala (40.73 per cent), Belgaum (40.53 per cent), Firozpur (40.05 per cent), Jalandhar (39.51 per cent), Dalhousie (39.31 per cent), Jabalpur (38.89 per cent), Pachmarhi (38.44 per cent), Kirkee (38.21 per cent), Ranikhet (37.68 per cent) and Bakloh (37.24 per cent). Spatially, this category formed a large regional cluster of contiguously located cantonments in the northwest along with those which recorded very high proportion of total workers. Also, a few isolated pockets in south, west and central India were also
cluster across north to east comprising of contiguously located cantonments along the Indo-Gangetic plains (Map 2.21). Only two cantonments were located beyond this region, i.e. Aurangabad in the west and Secunderabad in south. The cantonments comprising this category were large and medium sized cantonments with high functional status, were large family stations and had a relatively large civil area population. While the number of total workers was quite sizeable in these cantonments, however, their proportion in the total population was very low due to their large dependent population. These cantonments were characterised by low to very low proportion of male and female workers, with the exception of high and very high proportion of female workers in the cantonments in west and south (Maps 2.22 and 2.23). Such patterns reflect the regional characteristics of proportion of male and female workers in cantonment towns.

A comparison of the spatial patterns of total workers in cantonment towns in 1961 and 2001 displayed a clear regional divide which is reflective of the strategic importance of some regions. Very high proportion of total and male workers but low proportion of female workers characterised the cantonments located in northwest, north and central India. On the other hand, low to very low proportion of total and male workers but high proportion of female workers were distinct in west, south and east.


One of the most distinctive features of the Indian society is its caste system. Rooted in this concept is the social stratification of the society on the basis of division of labour into four varnas, viz. the Brahmins, the Kshatriyas, the Vaishyas and the Shudras. The Government of India in 1950 brought out a list of communities / castes which were the lowest in social hierarchy, i.e. the Shudras (specified as per Article 341 of the Constitution of India) in order to bring them into the mainstream through various socio-economic measures. Hence, these castes have been termed as the Scheduled Castes, whose number of constituent castes has increased since their first enumeration.

The Scheduled Caste population within cantonment towns formed a part of the troops comprising units stationed in the military area and the civilians residing in the civil areas. The presence of this social group along with others has historical linkages with the army and cantonment towns since the British period when several regiments of the Indian Army were based on caste and regional affiliations, and even today they
In the light of historical association of the Scheduled Caste population with the army and military officers, their proportion in the population of cantonment towns has persistently remained higher as compared to their national urban average (Table 2.14 and Fig. 2.4). Trends in the proportion of Scheduled Caste population in cantonment towns as shown in Fig. 2.4 reveal a low but steady increase from 12.47 per cent in 1961 to 16.80 per cent in 1991 followed by a marginal decline to 15.10 per cent in 2001. In fact, their proportion was consistently below national urban average in only seven cantonments, viz. Ramgarh, Shillong and Barrackpur in the east where proportion of tribal population is relatively high; Pune and Aurangabad in west, Kannur in south and Roorkee in northwest. However, the growth of Scheduled Castes in cantonment towns was not only consistently lower than their national urban average decadal and overall growth rates but it also recorded a drastic slow down from 24.97 per cent in 1961 to 3.68 per cent in 2001 (Table 2.14). This is related to small scale of economic function which is primarily trade and commerce oriented, and a considerable lack of their traditional employment avenues in industrial, manufacturing and construction units within cantonment towns as compared to their urban counterparts.

An analysis of the proportion of Scheduled Castes in individual cantonments revealed that: (i) only four cantonments, viz. Shahjahanpur, Dalhousie, Dehu Road and Kirkee recorded a continuous increase in the proportion of Scheduled Caste population since 1961; (ii) Nasirabad is the only cantonment to record a continuous decline in the proportion of its Scheduled Caste population since 1971. This is related to an increase in its troop strength upon its emergence as an important artillery station and increased strategic importance after the Indo-Pak War of 1971; (iii) an overwhelming majority of 40 out of 59 cantonments recorded positive overall percentile change in the proportion of Scheduled Caste population during 1961-2001. This is indicative of their increased presence in cantonment towns and expected to be related to the civil area population.

Broadly, variations in the proportion of Scheduled Caste population among cantonments are related to: (i) the type of units stationed in a cantonment, with those having a considerable Scheduled Castes troops positively affecting the proportion of Scheduled Castes in the total population of that cantonment; (ii) a corollary to the above is the location of regimental centres in cantonments, e.g. Fatehgarh and Sagar associated with Sikh Light Infantry Regimental Centre and Mahar Regimental Centre respectively recorded high proportion of Scheduled Castes. On the other hand,
(iii) Cantonment towns with low proportion of Scheduled Caste population (between 11.81 and 8.02 per cent)

(iv) Cantonment towns with very low proportion of Scheduled Caste population (less than 8.02 per cent)

(i) Cantonment towns with very high proportion of Scheduled Caste population (more than 17.40 per cent): Fifteen cantonments which comprised this category are Dagshai (39.06 per cent), Allahabad (29.02 per cent), Morar (27.23 per cent), Kasauli (26.50 per cent), Secunderabad (22.94 per cent), Amritsar (22.64 per cent), Landaur (21.67 per cent), Nasirabad (20.37 per cent), Fatehgarh (20.23 per cent), Sagar (19.94 per cent), Almora (19.23 per cent), Varanasi (18.93 per cent), Babina (18.12 per cent), Delhi (18.07 per cent) and St. Thomas Mount (17.40 per cent). Very high proportion of Scheduled Caste population was spatially concentrated across north, northwest and central India which formed a linear pattern of mostly small sized, non-contiguously located cantonments (Map 2.24). The two exceptions were in the south (Secunderabad and St. Thomas Mount). A small population base favoured relatively high proportion of the Scheduled Caste population in several cantonments.

However, regional characteristics of marked presence of this social group and the location of large cities which offered employment opportunities, particularly in the vicinity of medium and large sized cantonments resulted in a very high proportion of Scheduled Castes in these cantonments. In addition to the regional factor, a very high proportion of the Scheduled Caste population in Sagar and Fatehgarh was also contributed by the location of regimental centres of two infantry regiments dominated by the low caste groups.

(ii) Cantonment towns with high proportion of Scheduled Caste population (between 17.40 and 11.81 per cent): This category included fifteen cantonments, viz. Wellington (15.98 per cent), Kanpur (15.88 per cent), Mathura (15.85 per cent), Agra (15.50 per cent), Sabathu (15.27 per cent), Jhansi (15.19 per cent), Lucknow (15.03 per cent), Ranikhet (14.62 per cent), Ahmadnagar (13.83 per cent), Jammu (13.68 per cent), Ahmadabad (13.57 per cent), Bareilly (13.25 per cent), Dinapur (12.57 per cent), Mhow (11.87 per cent) and Kamptee (11.81 per cent). This category was associated with medium and small sized cantonments located in north and northwest India adjacent to those with very high proportion of Scheduled Caste population. Thus, these
B) Spatial Pattern of Distribution of Scheduled Caste Population (2001)

The Scheduled Caste population comprised 15.10 per cent of the total population of cantonment towns in 2001. As many as thirty cantonments recorded above average proportion of Scheduled Castes. Their proportion ranged between 36.14 per cent in Allahabad and 0.22 per cent in Badamibagh. The spatial patterns of distribution of Scheduled Castes in 2001 showed a continuation of their high proportion in cantonments located in north and central India, the emergence of cantonments in the west with relatively high proportion of Scheduled Castes, and a near total shift of the very low proportion category from cantonments in the west to those in northwest and north. On the basis of proportion of Scheduled Caste population in cantonments in 2001, four categories of cantonment towns can be identified (Map 2.25):

(i) Cantonment towns with very high proportion of Scheduled Caste population (more than 18.81 per cent)
(ii) Cantonment towns with high proportion of Scheduled Caste population (between 18.81 and 15.13 per cent)
(iii) Cantonment towns with low proportion of Scheduled Caste population (between 15.13 and 11.52 per cent)
(iv) Cantonment towns with very low proportion of Scheduled Caste population (less than 11.52 per cent)

(i) Cantonment towns with very high proportion of Scheduled Caste population (more than 18.81 per cent): This category comprised of fifteen cantonments, viz. Allahabad (36.14 per cent), Kasauli (29.14 per cent), Dagshai (28.47 per cent), Agra (26.47 per cent), Nainital (25.76 per cent), Jhansi (25.55 per cent), Shahjahanpur (23.07 per cent), St. Thomas Mount (22.82 per cent), Chakrata (21.94 per cent), Deolali (20.86 per cent), Morar (20.37 per cent), Fatehgarh (19.74 per cent), Wellington (19.42 per cent), Sagar (19.26 per cent) and Pachmarhi (18.81 per cent). This category formed a conspicuous axis of almost contiguously located, medium sized cantonments up to central India, a small cluster of small sized hill station cantonments in the northwest and isolated pockets in west and south (Map 2.25). The primary reason of a very high proportion of Scheduled Castes in these cantonments was their regional concentration in northern and central India, with seven cantonments having recorded a very high proportion in 1961.
(iv) Cantonment towns with very low proportion of Scheduled Caste population (less than 11.52 per cent): The fourteen cantonments which comprised this category are Faizabad (11.36 per cent), Sabathu (11.31 per cent), Meerut (11.30 per cent), Pune (9.65 per cent), Kanpur (9.30 per cent), Barrackpur (8.99 per cent), Jammu (8.93 per cent), Ramgarh (8.58 per cent), Clement Town (8.20 per cent), Kannur (7.96 per cent), Dehradun (7.95 per cent), Roorkee (4.69 per cent), Shillong (2.92 per cent) and Badamibagh (0.22 per cent). This category formed a conspicuous cluster of contiguously located large and medium sized cantonments in the northwest and regional concentration in the east (Map 2.25). It also formed isolated pockets in the north, west and south. Regional association with social groups such the Scheduled Tribes and high caste groups such as the Brahmins expected to be residing in the civil areas in these cantonments led to very low proportions of Scheduled Castes in them.

This analysis reveals an influence of regional concentration of Scheduled Caste population on their proportion in cantonment towns. However, strategic importance of individual cantonments and their region of location contributed to variations in their proportions. These were most discernible in 2001 as relatively low proportions of the Scheduled Castes were recorded in cantonment towns in the northwest.


The tribes are believed to be the earliest settlers in Indian peninsula. They are also called adivasis, implying original inhabitants. Like the case of Scheduled Castes, several tribal communities in 1950 were brought under the purview of a schedule as per the Constitution of India and therefore, they have been termed as the Scheduled Tribes. Their habitations in interior parts of the country; in forested areas and hilly regions particularly in parts of central, northeast, southwest India is attributed to their traditional mode of living and dependence on natural environment for sustenance and livelihood. Therefore, they comprised a low and an insignificant proportion of the total population in urban areas as well as cantonment towns.

The population of cantonment towns comprised a miniscule but an increasing proportion of the Scheduled Tribe population, ranging between 0.42 per cent in 1961 and 1.33 per cent in 2001 (Table 2.15). Their continuously increasing trend was steep during 1971-91, from 0.55 per cent in 1971 to 0.89 per cent in 1981 to 1.18 per cent in 1991 and was relatively modest (1.33 per cent) in the subsequent decade (Fig. 2.5).
separate category from the general population. Although the decadal as well as overall growth rates of Scheduled Tribe population in cantonment towns were fairly high, however, these did not translate into equally high proportion in the total population, and their overall percentile increase was by less than one per cent points during 1961-2001.

The trends in proportion of Scheduled Tribe population among individual cantonments revealed that: (i) only two cantonments, Dehu Road and Kirkee, both located in the west recorded a continuous increase in the proportion of their Scheduled Tribe population since 1961; (ii) an overall increase in the proportion of Scheduled Tribe population during 1961-2001 was recorded in forty six cantonments, most of which did not record their presence in their respective population in 1961. The percentile increase ranged between 24.83 per cent points in Chakrata and 0.01 per cent points in Agra; (iii) three cantonments recorded an overall decline in their proportion of Scheduled Tribe population, viz. Shillong, Ahmadabad and Barrackpur.

A) Spatial Pattern of Distribution of Scheduled Tribe Population (1961)

In 1961, the Scheduled Tribe population numbered only 5091 persons, which accounted for less than half a per cent (0.42 per cent) of the total population of cantonment towns. They were conspicuous by their absence in a majority of the cantonments (thirty nine). Among the remaining twenty cantonments located in west, central, east and southern India, only nine recorded above average proportion of Scheduled Tribe population. Shillong recorded the highest proportion of Scheduled Tribe (13.03 per cent), whereas Secunderabad and Wellington recorded their lowest proportion (0.02 per cent). The latter also recorded the lowest number (2 persons) of Scheduled Tribes. On the basis of the proportion of Scheduled Tribe population in cantonments in 1961, four categories of cantonment towns can be identified (Map 2.26):

(i) Cantonment towns with very high proportion of Scheduled Tribe population (more than 1.50 per cent)

(ii) Cantonment towns with high proportion of Scheduled Tribe population (between 1.50 and 0.40 per cent)

(iii) Cantonment towns with low proportion of Scheduled Tribe population (between 0.40 and 0.14 per cent)

(iv) Cantonment towns with very low proportion of Scheduled Tribe population (less than 0.14 per cent)
to east through central India comprised of seven cantonments; (ii) regional cluster of very high and high proportion in six cantonments in the west; (iii) the emergence of Scheduled Tribes in low to very low proportion in cantonments across north and northwest India. On the basis of the proportion of Scheduled Tribe population in cantonments in 2001, four categories of cantonment towns can be identified (Map 2.27):

(i) Cantonment towns with very high proportion of Scheduled Tribe population (more than 2.42 per cent)

(ii) Cantonment towns with high proportion of Scheduled Tribe population (between 2.42 and 0.52 per cent)

(iii) Cantonment towns with low proportion of Scheduled Tribe population (between 0.52 and 0.15 per cent)

(iv) Cantonment towns with very low proportion of Scheduled Tribe population (less than 0.15 per cent)

(i) Cantonment towns with very high proportion of Scheduled Tribe population (more than 2.42 per cent): Thirteen cantonments which comprised this category include Chakrata (24.83 per cent), Pachmarhi (11.09 per cent), Ramgarh (9.13 per cent), Dalhousie (6.16 per cent), Ahmadabad (5.87 per cent), Aurangabad (5.82 per cent), Shillong (4.05 per cent), Mhow (3.65 per cent), Kamptee (3.47 per cent), Landaur (2.74 per cent), Dehu Road (2.66 per cent), Deolali (2.50 per cent) and Jabalpur (2.42 per cent). This category formed a belt comprising of large and medium sized cantonments which extended across the breadth of the country from west to east, and three contiguousy located cantonments formed a distinct cluster in the west (Map 2.27). These cantonments are associated with the traditional areas of occupance and concentration of the Scheduled Tribe population.

(ii) Cantonment towns with high proportion of Scheduled Tribe population (between 2.42 and 0.52 per cent): This category comprised of twelve cantonments, namely Dinapur (2.40 per cent), Jammu (1.94 per cent), Kirkee (1.74 per cent), Ahmadnagar (1.66 per cent), Bakloh (1.49 per cent), Belgaum (1.43 per cent), Secunderabad (1.14 per cent), Almora (1.13 per cent), Sagar (0.91 per cent), Kannur (0.62 per cent), Yol (0.53 per cent) and Morar (0.52 per cent). High proportion of Scheduled Tribe formed two small pockets of regional concentration in the west and south along with the cantonments with very high proportion and another pocket in northwest India (Map 2.27).
remaining cantonments were set up in the twentieth century. The geographical location of cantonment towns is characterised by their siting along river banks, hill top, plateau, transport nodes, valley, spur and coastal plain. Their establishment near pre-existing towns resulted in the twin-town urban form. The present distribution of fifty nine cantonment towns is within the administrative jurisdiction of nineteen States, among which Uttar Pradesh has the largest number, with 13 out of 59 cantonments. Regionally, cantonment towns are concentrated in the strategic northwest, north and west as compared to other regions.

The special function (defence) performed by the cantonment towns, the geo-strategic importance of the region of their location as well as the relative importance of individual cantonments resulted in their highly male dominated population profile. The peculiarity of en mass movement of troops to and from cantonments and operational areas determined the trends of population attributes during different Census decades. The population base including civil area population, increased accommodation facilities for families of military personnel and increasing female presence in employment in defence and its ancillary activities contributed to a moderating effect on population attributes, otherwise influenced by the male population.

The distribution of population in cantonment towns was highly skewed as large sized cantonments contained nearly two thirds of the total population, whereas the proportion of population in small sized cantonments got progressively reduced to only 2.07 per cent in 2001. The population size of cantonment towns was found to be inversely and insignificantly related to most of the socio-economic attributes of population. Broadly, large sized cantonments recorded relatively balanced sex ratio, low proportion of total, male and female literates and workers; but a high proportion of Scheduled Castes.

A fluctuating trend in the growth of population of cantonment towns during 1901-2001 was influenced by the movement of troops and reflected their functional character. The growth of population of cantonment towns remained very low, viz. 0.30 per cent, 7.03 per cent and 4.74 per cent during 1901-31 and modest, viz. 14.64 per cent, 13.90 per cent, 22.96 per cent, 5.36 per cent and 15.38 per cent during 1961-2001. High growth of population, viz. 29.07 per cent and 42.88 per cent recorded during two successive decades, i.e. 1931-51 were most conspicuous and were related to troop induction during the Second World War as well as after Independence, and the resettlement of displaced population following Partition. The relative instability in the growth of population of
their high proportion in west, southern and central India. Female workers showed regional characteristics of high to very high proportion in cantonments located in south, west and central India as compared to those in north, northwest. This is related to greater economic opportunities in defence related factories and adjoining urban centres.

The Scheduled Caste population formed a relatively high proportion (ranging between 12.47 per cent and 16.80 per cent) and above national urban average (ranging between 8.66 per cent and 11.95 per cent) within cantonment towns in different decades during 1961-2001. Their historical association with the army as service providers as well as forming a part of caste based regiments contributed to their consistently high proportions in the total population of cantonment towns. The distribution of Scheduled Caste population in regional context is related to the civil area population, whose relatively large size contributed positively to this important social attribute of population. Cantonments located in the north and central India recorded high to very high proportion of Scheduled Caste population compared to those in the east and northwest. This generalization of their regional concentration does not correspond with the strategically important cantonments, in the northwest during periods of stationing of a large combatant component, and was evident in lower proportion of Scheduled Caste population in 2001 in the three cantonments in Punjab, i.e. Amritsar (15.93 per cent), Firozpur (13.98 per cent) and Jalandhar (12.26 per cent) as compared to their respective municipal counterparts, viz. 18.85 per cent, 19.72 per cent and 26.95 per cent.

Cantonment towns recorded an insignificant proportion of less than two per cent of Scheduled Tribe population during 1961-2001. It consistently formed an increasing proportion in the total population of cantonment towns. The spatial pattern of their distribution in cantonment towns is highly region specific and associated with their traditional belt of dominance stretching from east to west and across central India.

The regional analysis through spatial distribution of population attributes of cantonment towns revealed the distinct position of geo-strategically important northwest region, which recorded the maximum number of cantonment towns (22 out of 59), of which Jalandhar Cantonment presents a typical case. It has continued to remain a medium sized Class III urban settlement since 1941 whereas the other two cantonment towns in the State, viz. Firozpur and Amritsar have moved up in the hierarchy from Class III and V in 1961 to Class II and IV in 2001 respectively. In its size class category, Jalandhar Cantonment is the only cantonment in India to have recorded a negative overall and


10. Panjim (Goa), Ranchi (Chattisgarh), Bhubaneshwar (Orissa), Kalimpong (Sikkim), Guwahati (Assam), Tawang (Arunachal Pradesh), Kohima (Nagaland), Imphal (Manipur), Agartala (Tripura) are some of the examples of military stations in the States which do not have a cantonment town. Similarly military stations at Kapurthala, Fazilka and Khasa are located in the vicinity of cantonment towns of Jalandhar, Firozpur and Amritsar respectively in the State of Punjab.


13. Population figures for 1901 were available for 44 out of 59 cantonment towns. Among the remaining 15 cantonments, 12 were enumerated as part of their adjoining municipal towns and three were established later, viz. Ramgarh (1941), Yol (1942) and Dehu Road (1958). In 1951, population data were not available for five cantonments, viz. Bakloh, Dalhousie and Jutogh in Himachal Pradesh were declassified; Dehu Road in Maharashtra and Kannur in Kerala were enumerated in their respective adjoining municipal units.

14. Several age criteria have been used to define literates since 1981 Census, viz. more than 4 years, more than 6 years and more than 7 years in 1981, 1991 and 2001 respectively. Similarly a person was treated as a worker in 1961 if he had worked at least for a day in regular work in the preceding fortnight of enumeration; in 1971 the reference period was reduced to one week before enumeration; in 1981 the concept of main and marginal workers was introduced with the distinction in number of days of work being more than 183 and less than 183 days respectively. This was also used in the 1991 and 2001 Censuses. Such conceptual changes in definitions influenced the number of persons who were enumerated as literates and workers during successive Census decades. A specific case is of 1971 when a person engaged in household
21. Inadequate development of industries, trade and commerce and fast growth of nearby towns is associated with slow growth of population in several towns due to lack of employment generation capacity, leading to large scale out migration. This situation is also relevant in some of the cantonment towns, especially hill station cantonments. See Pathak, P. (1986): “Slow Growing Towns in India”, Population Geography, Vol. 8 (1 & 2), pp. 64-75.

22. Across different regional settings, cities adjoining individual cantonments recorded overall very high growth of population during 1961-2001, e.g. Meerut City (433.13 per cent)-Meerut Cantonment (23.38 per cent); Aurangabad City (897.17 per cent)-Aurangabad Cantonment (89.14 per cent); Jabalpur City (215.69 per cent)-Jabalpur Cantonment (62.14 per cent); Belgaum City (212.51 per cent)-Belgaum Cantonment (25.78 per cent); Barrackpur City (126.40 per cent)-Barrackpur Cantonment (30.33 per cent). In fact, only a few cantonment towns grew faster than their adjoining municipal counterparts, viz. Jammu Cantonment (421.67 per cent)-Jammu City (260.10 per cent); Shahjahanpur Cantonment (181.87 per cent)-Shahjahanpur City (168.64 per cent); Faizabad Cantonment (206.62 per cent)-Faizabad City (72.85 per cent) etc.

23. Military exigencies like wars have led to both shortage as well as sudden increase in troop strength and reflected in the population of cantonment towns in general and individual cantonments associated with such movements in particular. E.g. during the two World Wars, the strength of the army increased several folds from 2.39 lakhs to more than 14 lakhs during 1914-18 and from 1.89 lakhs in 1939 to 2.6 lakhs in 1945. An increase in the total population of cantonment towns was recorded in the corresponding Census decades, as well as in individual cantonments such as Deolali, Kirkee, Mathura, Amritsar, Dehradun, Delhi etc. See Longer, V. (1974): Red Coats to Olive Green: A History of the Indian Army, 1600-1974, Allied Publishers, New Delhi, pp. 151-152, 187; Tai-Yong, T. (2000): “An Imperial Home-Front: Punjab and the First World War”, The Journal of Military History, Vol. 64 (2), pp. 376-378.


38. A few examples of cantonments which recorded literacy rates higher than their adjoining municipal counterparts in 2001 are: Kannur Cantonment (89.08 per cent)-Kannur Town (82.84 per cent), Roorkkee Cantonment (87.06 per cent)-Roorkkee City (76.35 per cent), Jhansi Cantonment (73.67 per cent)-Jhansi City (68.42 per cent), Aurangabad Cantonment (73.30 per cent)-Aurangabad City (70.67 per cent), Shahjahanpur Cantonment (69.62 per cent)-Shahjahanpur City (49.65 per cent). On the other hand, there are a few examples of cantonments which recorded lower literacy rates as compared to their adjoining municipal towns in 2001 including: Allahabad Cantonment (64.76 per cent)-Allahabad City (72.37 per cent), Shillong Cantonment (73.65 per cent)-Shillong Town (79.07 per cent), Jammu Cantonment (72.03 per cent)-Jammu City (76.24 per cent), Dehu Road Cantonment (73.03 per cent)-Dehu Road Town (76.24 per cent), Sagar Cantonment (70.71 per cent)-Sagar City (73.42 per cent).


45. Most of the cantonments irrespective of their size recorded very low proportion of female workers, and expectedly also lower than the corresponding figures of adjoining cities. For example, Shillong City (21.25 per cent)-Shillong Cantonment (9.03 per cent); Sagar City (19.25 per cent)-Sagar Cantonment (17.19 per cent); Dehu Town (18.87 per cent)-Dehu Road Cantonment (13.31 per cent); Pune City (15.39 per cent)-Pune Cantonment (13.59 per cent); Indore City (10.97 per cent)-Mhow Cantonment (8.67 per cent); Ambala City (10.01 per cent)-Ambala Cantonment (7.42 per cent); Jalandhar City (9.91 per cent)-Jalandhar Cantonment (7.61 per cent); Mathura City (6.29 per cent)-Mathura Cantonment (5.10 per cent). However, the reverse is also true with higher proportion of female workers in cantonments than their municipal counterparts, particularly the cantonments in south, viz. St. Thomas Mount Cantonment (15.01 per cent)-Chennai (13.52 per cent); Secunderabad Cantonment (13.80 per cent)-Hyderabad City (9.73 per cent), Belgama Cantonment (11.24 per cent)-Belgama City (10.14 per cent). In fact, three cantonments, viz. Wellington, Sagar and Kannur recorded a consistently above national urban average proportion of female workers since 1961.

46. It has been noted that cantonment towns have failed to develop strong and symbiotic hinterland relationships. As a result these have not prompted regional development by acting as centres of diffusion. See Sita, K. and V.S. Phadke (1980): “Declining Towns of India, 1971”, *Transactions, Institute of Indian Geographers*, Vol. 2 (2), pp. 1-7 and Sharma, K.D. (1993), *op cit.*, p. 159.