CHAPTER 8
Profiles Of Laboratories, Technical Information Centres, User Opinion
8.1 BANGALORE ZONE:
AERONAUTICAL DEVELOPMENT ESTABLISHMENT (ADE)

ADE was established in January, 1959 to support the acquisition of equipment to the air force and type approval of aeronautical stores supplied by the industry. The 1990 saw the emergence of ADE as the major Aeronautical systems research laboratory of the defence Research and Development organization involving in practically all major aspects of aeronautical research, design and development relevant to military aviation, excepting propulsion systems. The charter of duties of ADE are:

- to evolve aeronautical standards, specifications, and their application and implementation.

- to evolve test procedures for evaluating new and prototype aircraft including helicopters, equipment and aircraft materials and to conduct tasks on trials as may be required.

- to undertake Research and Development for improvement of safety, performance, reliability of aircraft including helicopters and their equipment.

ADE should undertake studies and projects as may be needed to develop the necessary expertise in the various disciplines/fields of
technology, with the object of undertaking at a subsequent date as may be decided by scientific advisor to the MOD.

Although the duties covers a wide field of activities in aeronautics, the present emphasis is mainly on undertaking Research and Development projects either on the basis of expressed requirements of the defence science or as anticipatory Research and Development to meet possible requirements of the user in future R & D projects.

8.1.1 VISION : To be a center for development of state of the art aeronautical systems for the services.

8.1.2 MISSION : To develop and lead to production aeronautical systems to meet the current needs of the services and progressively enhance the technological infrastructure and capabilities.

8.1.3 CORE COMPETENCE :

Design and Development of Unmanned Aerial Vehicles
   . System design
   . Aerodynamic configuration
   . Structural Design including composites
   . Flight control and Avionics etc.

Design and development of systems for combat aircraft.

Flight simulation
ADE has a good collection of books, journals, bound volumes and technical reports. Knowledge center is a repository of these collections and this center provides valuable services for knowledge growth. This center has significantly computerized its in-house functions like acquisition, serials control, OPAC and circulation using the software Suchika 2.0 version (Network version).

The center has also implemented the barcode technology in 1996 and automated the annual stock verification and circulation functions. It has developed the database of indexed journal articles in thrust areas. It is available in CDS/ISIS 3.0 (network version) for information retrieval services. Knowledge center is disseminating its CAS on monthly basis through ADE intranet to all users and through e-mail to other science and technology libraries located at Bangalore.

Services: Circulation, Overnight lending, Reservations, Renewals, Recalls, Bibliographic database search, CD-ROM search (full text based), Inter library loan facilities, Xeroxing, display of new documents etc.

Services from other TICs: Inter library loan, photocopying etc.

Services to others: Sister DRDO laboratories, and other establishments located at Bangalore.

Collection: Books, Reports, Journals, Standards, Video Cassettes, Microfiches

Other activities: Care of library materials, document suggestion procedure, general instructions, alphabetical index etc. Consultancy in the area of work study.
TECHNICAL INFORMATION CENTRE:

The TIC was established to cater the needs of ADE. The profile of TIC as follows:

- Automation: Completed
- Budget: 50 lakhs
- Employees of TIC: 13
- Professionals: 6
- Readers enrolled: Around 600
- Readers daily visit: 25

Collection:

- Books: 11000
- Journals subscribed: 180
- Bound volumes: 6900
- Technical Reports: 3500
- Standards: 4000
- E-Books: -
- Classified documents: Yes

Readers ask for: Books, Journals

Cadre mostly use: Scientists, Technical officers, Technical staff

Areas of Collection: Armored fighting vehicles, flight control, avionics, Aircrafts, Jane’s publications etc.

Services from other TICs: Inter library loan

Services to others: Other nearby laboratories
8.1.5 **ADE**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>217</td>
<td>243</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>196</td>
<td>229</td>
</tr>
<tr>
<td>Staff</td>
<td>111</td>
<td>145</td>
</tr>
<tr>
<td>Others</td>
<td>27</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td>551</td>
<td>655</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential contributions of TIC towards defence research (1-7)*</td>
<td>401</td>
<td>112</td>
<td>38</td>
</tr>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>504</td>
<td>11</td>
<td>36</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>496</td>
<td>42</td>
<td>13</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>419</td>
<td>108</td>
<td>24</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>510</td>
<td>37</td>
<td>4</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent (93%)</td>
<td>Good (5.2%)</td>
<td>Useful (0.9%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>513</td>
<td>29</td>
<td>5</td>
</tr>
</tbody>
</table>

* indicates questions from questionnaire number 1
In 1965 a need was felt to set up an independent DRDO laboratory for handling tasks relating to armored fighting vehicles. Accordingly, the detachment of VRDE Avadi was established in 1967 and this was renamed as CVRDE to distinguish it from its sister organization VRDE, Ahmednagar.

The primary role of CVRDE is to design, develop, manufacture prototypes and conduct performance evaluation of tracked vehicles.

The origin of CVRDE can be traced back to the mechanical transport establishment set up during World War II. Later in 1947 this establishment was moved to Ahmednagar to form technical development establishment.

CVRDE is responsible for design, development and integration of systems and technologies for armored fighting vehicles and their variants.

8.2.1 VISION: Be a center for design and development of state of the art armored fighting vehicle for the services.

8.2.2 MISSION: Design, develop and lead to production tracked armament vehicles and specialist vehicles to meet the needs of the
services. Build technological capabilities in critical areas including test and evaluation of combat systems.

8.2.3 CORE COMPETENCE:

Design, development and evaluation of AFVs
Design and development of critical technologies required for AFVs.
8.2.4 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of CVRDE. The profile of TIC as follows:

Automation : Completed
Budget : 35 lakhs
Employees of TIC : 11
Professionals : 8
Readers enrolled : 950
Readers daily visit : 50

Collection:

Books : 12000
Journals subscribed : 137
Bound volumes : 3753
Technical Reports : 9058
Standards : 16547
E-Books : Nil
Classified documents : Yes

Readers ask for: Books, Journals
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Armored Flight Vehicles, Mechanical Engineering.
Services from other TICs: Inter library loan, Translation
Services to others: Local Defence Establishments
### Table -14

8.2.5 **CVRDE**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>96</td>
<td>102</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>274</td>
<td>305</td>
</tr>
<tr>
<td>Staff</td>
<td>198</td>
<td>226</td>
</tr>
<tr>
<td>Others</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>597</td>
<td>662</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>504 (84%)</td>
<td>84 (14%)</td>
<td>9 (1.5%)</td>
</tr>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>532 (89%)</td>
<td>62 (10%)</td>
<td>3 (0.5%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>320 (53%)</td>
<td>213 (35%)</td>
<td>64 (10%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>494 (82.7%)</td>
<td>91 (15.2%)</td>
<td>12 (2.0%)</td>
</tr>
<tr>
<td>Resource sharing (30-34)*</td>
<td>Excellent 569 (95.3%)</td>
<td>Good 11 (1.8%)</td>
<td>Useful 15 (2.5%)</td>
</tr>
</tbody>
</table>

* indicates questions from questionnaire number I
GTRE has been engaged in the development of propulsion system for military aircraft for the past three decades.

8.3.1 VISION : To be an international standard aero engine design house.

8.3.2 MISSION : To develop gas turbine engines for LCA and derivatives for other applications. Concurrently develop state of the art technologies and associated test facilities.

8.3.3 CORE COMPETENCE : Design and development of Gas turbine engines for combat aircraft.

   Development of technologies relating to gas turbine engines.

   Development of aero engine variants for marine applications.
8.3.4 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of GTRE. The profile of TIC as follows:

- Automation: Completed
- Budget: 94 lakhs
- Employees of TIC: 12
- Professionals: 8
- Readers enrolled: 1664
- Readers daily visit: 30

Collection:
- Books: 8182
- Journals subscribed: 174
- Bound volumes: 8040
- Technical Reports: 11440
- Standards: 3289
- E-Books: Nil
- Classified documents: Nil

Readers ask for: Books, Journals
Cadre mostly use: Scientists
Areas of Collection: Engineering, Gas turbines, Materials and Metallurgy, CFD, Aerospace Science
Services from other TICs: Inter library loan
Services to others: Other local DRDO laboratories
### Table -15

#### 8.3.5 **GTRE**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>164</td>
<td>179</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>199</td>
<td>238</td>
</tr>
<tr>
<td>Staff</td>
<td>167</td>
<td>198</td>
</tr>
<tr>
<td>Others</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>548</strong></td>
<td><strong>640</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>429 (78%)</td>
<td>92 (16%)</td>
<td>27 (4.9%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Methods of information dissemination (8-12)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>476 (86%)</td>
<td>63 (11%)</td>
<td>9 (1.6%)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Usage of TIC (13-19)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>512 (93%)</td>
<td>30 (5%)</td>
<td>6 (1%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Role of DESIDOC (20-29)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>396 (72%)</td>
<td>148 (27%)</td>
<td>4 (0.7%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resource Sharing (30-34)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>493 (89.9%)</td>
<td>50 (9.1%)</td>
<td>5 (0.9%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall opinion (35)*</th>
<th>Excellent</th>
<th>Good</th>
<th>Useful</th>
<th>Not Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>498 (90%)</td>
<td>41 (7%)</td>
<td>6 (1%)</td>
<td>3 (0.5%)</td>
</tr>
</tbody>
</table>

* indicates questions from questionnaire number I
LRDE has been engaged in the development of radar systems for the past four decades.

8.4.1 VISION: Be a design and development center for military radars.

8.4.2 MISSION: Develop and facilitate absorption of technology of state of the art radar systems for meeting the needs of the services. Enhance the infrastructure, knowledge base and technologies for achieving self-reliance in state of the art electronic sensors.

8.4.3 CORE COMPETENCE: Design and development of radar systems
Development of radar technologies
Radar system integration, testing and evaluation.
The TIC was established to cater the needs of LRDE. The profile of TIC as follows:

Automation: Completed
Budget: 85 lakhs
Employees of TIC: 13
Professionals: 4
Readers enrolled: 975
Readers daily visit: 15-20

Collection:

Books: 19000
Journals subscribed: 167
Bound volumes: 7000
Technical Reports: 15000
Standards: 500
E-Books: Yes
Classified documents: Yes

Readers ask for: Books, Journals, Reports
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Electronics, Radars, Computers, Communication etc.
Services from other TICs: Inter library loan
Services to others: Other Bangalore based DRDO establishments.
### Table -16

#### 8.4.5 LRDE: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>196</td>
<td>218</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>114</td>
<td>162</td>
</tr>
<tr>
<td>Staff</td>
<td>98</td>
<td>113</td>
</tr>
<tr>
<td>Others</td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>456</td>
<td>514</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>411</td>
<td>43</td>
<td>2</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>394</td>
<td>62</td>
<td>0</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>348</td>
<td>97</td>
<td>11</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>397</td>
<td>44</td>
<td>15</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 399</td>
<td>Good 48</td>
<td>Useful 7</td>
</tr>
<tr>
<td></td>
<td>(87%)</td>
<td>(10%)</td>
<td>(1.5%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number 1
8.5 BANGALORE ZONE : DEFENCE BIO-
ENGINEERING
AND ELECTROMEDICAL
LABORATORY (DEBEL)

8.5.1 DEBEL is responsible for carrying out research and
development in the areas of protection equipment, life saving devices
and biomedical technology to meet the requirements of the armed
forces.

8.5.2 VISION: Be a world class center in the development of life
support and biomedical systems and devices

8.5.3 MISSION: Design, development and evaluation leading to
productionisation of state of the art life support and biomedical
systems and devices for meeting the requirement of services.
Exploring spin-off technologies for civilian applications.

8.5.4 CORE COMPETENCE: Design and development of life support
systems for armed forces.
The Technical Information Centre of DEBEL was established to cater the needs of its employees. The profile of TIC is as follows:

Automation : Completed
Budget : 6 lakhs
Employees of TIC : 4
Professionals : 2
Readers enrolled : 140
Readers daily visit : 20

Collection:

Books : 4500
Journals Subscribed : 40
Bound volumes : 2200
Technical Reports : 600
Standards : 800
E-Books : Nil
Classified documents : Nil

Readers mostly ask for : Books, Journals
Cadre mostly use TIC are : Scientists and Technical Officers
Areas of Collection: Bio-Engineering, Medical and Bio-Medical tools
Services used from other TICs: Inter library loan
Services to others : NAL, ADA, NIMHANS etc., these establishments are also using the services of TIC.
### Table -17

#### 8.5.6 **DEBEL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Staff</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>(1-7) *</td>
<td>(70%)</td>
<td>(10%)</td>
<td>(18.9%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Methods of information dissemination (8-12)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>32</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>(8-12)*</td>
<td>(86%)</td>
<td>(10%)</td>
<td>(2.7%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Usage of TIC (13-19)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>29</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>(13-19)*</td>
<td>(78%)</td>
<td>(8%)</td>
<td>(13%)</td>
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</table>

<table>
<thead>
<tr>
<th>Role of DESIDOC (20-29)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>21</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>(20-29)*</td>
<td>(56%)</td>
<td>(27%)</td>
<td>(16%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resource Sharing (30-34)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>28</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>(30-34)*</td>
<td>(75.6%)</td>
<td>(16.2%)</td>
<td>(8.1%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall opinion (35)*</th>
<th>Excellent</th>
<th>Good</th>
<th>Useful</th>
<th>Not Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31</td>
<td>5</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>(35)*</td>
<td>(83%)</td>
<td>(13%)</td>
<td>(2.7%)</td>
<td></td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.6.1 DFRL was set up in 1961 to cater to the specialized food requirements for the armed forces and other paramilitary organizations. It has the expertise to conserve, preserve, stabilize, design, fabricate and engineer an array of food of Indian dietary which are shelf stable and provide adequate nutrition and calories.

8.6.2 VISION: To be a technological leader of excellence in food research and product development.

8.6.3 MISSION: Design, develop and evaluate safe, nutritious and convenience food to meet the needs of services and spin off to civil application

8.6.4 CORE COMPETENCE: Development of convenience food and ready to eat food products

Implementation of packaging systems and processing technologies for fresh and processed food

Testing and evaluation of food.
8.6.5 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the information needs of Defence food research laboratory. The profile of TIC are

Automation : Not done
Budget : 24 lakhs in Rupees and
         20 lakhs in foreign exchange
Employees of TIC : 3
Professionals : 1
Readers enrolled : 200
Readers daily visit : 10-12

Collection:
Books : 6000
Journals subscribed : 72
Bound volumes : 5472
Technical Reports : 200
Standards : BIS, PFA, AGMARK,
           CODEX
E-Books : Nil
Classified documents : Yes

Readers mostly ask for: Journals, Books, Standards

Cadre mostly use : Scientists, Technical officers

Areas of Collection : Food Science and Technology

Services from other TICs : Inter library loan

Services to others: Sister DRDO laboratories, Universities as and when required.
8.6.6 **DFRL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>14</td>
<td>19</td>
</tr>
<tr>
<td>Staff</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38</strong></td>
<td><strong>54</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>34</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>28</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>21</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>29</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent</td>
<td>Good</td>
<td>Useful</td>
</tr>
<tr>
<td></td>
<td>36 (94%)</td>
<td>0</td>
<td>2 (5%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.7 BANGALORE ZONE : NAVAL PHYSICAL AND OCEANOGRAPHIC LABORATORY (NPOL)

8.7.1 NPOL is engaged in the design and development of underwater sensors for integration with naval platforms and carryout oceanographic studies for naval applications.

8.7.2 VISION: Be a center of excellence in under water sensor and surveillance systems

8.7.3 MISSION: Design, develop, lead to production and integrate sonar systems (including transducers) for naval applications. Develop technologies for under water surveillance research, enhancing the understanding of the ocean environment and underwater materials.

8.7.4 CORE COMPETENCE: Sonar system design
Development of underwater electro acoustic transducer,
Man machine interface solutions.
8.7.5 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of NPOL. The profile of TIC as follows:

Automation : Completed  
Budget : 55 lakhs  
Employees of TIC : 12  
Professionals : 5  
Readers enrolled : Around 300  
Readers daily visit : 20

Collection:

Books : 13000  
Journals subscribed : 150  
Bound volumes : 4000  
Technical Reports : 600  
Standards : 1500  
E-Books : Yes  
Classified documents : Yes

Readers ask for: Books, Journals  
Cadre mostly use : Scientists, Technical officers, Technical staff  
Areas of Collection : Oceanography, Physics, Sonar systems, material science etc..  
Services from other TICs : Inter library loan  
Services to others : Course participants of various DRDO laboratories
Table -19

8.7.6 **NPOL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>110</td>
<td>124</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>109</td>
<td>120</td>
</tr>
<tr>
<td>Staff</td>
<td>58</td>
<td>64</td>
</tr>
<tr>
<td>Others</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>288</strong></td>
<td><strong>322</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>198 (68%)</td>
<td>74 (25%)</td>
<td>16 (5%)</td>
</tr>
</tbody>
</table>

| Methods of information dissemination (8-12)* | 202 (70%) | 53 (18%) | 33 (11%) |
| Usage of TIC (13-19)* | 231 (80%) | 49 (17%) | 8 (2%) |
| Role of DESIDOC (20-29)* | 176 (61%) | 98 (34%) | 14 (4%) |
| Resource Sharing (30-34)* | 201 (69.7%) | 66 (22.9%) | 21 (7.2%) |
| **Overall opinion (35)** | Excellent 259 (89.9%) | Good 24 (8%) | Useful 3 (1%) | Not Satisfied 2 (0.6%) |

*indicates questions from questionnaire number I
BANGALORE ZONE - OVERALL OPINION ON TECHNICAL INFORMATION CENTRES

- 91% EXCELLENT
- 6% GOOD
- 2% USEFUL
- 1% NOT SATISFIED

Diagram 6
BANGALORE ZONE-OVERALL OPINION ON TECHNICAL INFORMATION CENTRES

DIAGRAM - 7
8.8 DEHRADUN ZONE : DEFENCE AGRICULTURAL RESEARCH LABORATORY (DARL)

8.8.1 The focus of activities of DARL has been to provide high altitude agro technologies and utilization of natural resources of the region for sustainable development.

8.8.2 VISION: Be a center of excellence for high altitude agro-technologies.

8.8.3 MISSION: Development of sustainable and eco friendly high altitude agro technologies in the Himalayan region.

8.8.4 CORE COMPETENCE: Breeding of vegetable varieties and evolving appropriate agro technologies for Himalayan region.
8.8.5 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of DARL. The profile of TIC as follows:

Automation: Partial
Budget: 10 lakhs
Employees of TIC: 2
Professionals: 1
Readers enrolled: Around 100
Readers daily visit: 10

Collection:

Books: 4000
Journals subscribed: 40
Bound volumes:
Technical Reports: 200
Standards: Nil
E-Books: -
Classified documents: -

Readers ask for: Books, Journals
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Agriculture, Agronomy, Vegetable cultivation etc.
Services from other TICs: Inter library loan
Services to others: nil
### Table -20

#### 8.8.6 DARL: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>Staff</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes 16 (72%)</th>
<th>No 3 (13.6%)</th>
<th>No Response 3 (13.6%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>18 (81%)</td>
<td>3 (13.6%)</td>
<td>1 (4.5%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>21 (95%)</td>
<td>0</td>
<td>1 (4.5%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>14 (63%)</td>
<td>6 (27%)</td>
<td>2 (9%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>19 (86.3%)</td>
<td>2 (9%)</td>
<td>1 (4.5%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 22 (100%)</td>
<td>Good 0</td>
<td>Useful 0</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.9 DEHRADUN ZONE : DEFENCE RESEARCH AND DEVELOPMENT ESTABLISHMENT (DRDE)

8.9.1 DRDE has established infrastructure and expertise for chemical and biological defence preparedness.

8.9.2 VISION: Be a center of excellence in handling hazardous materials and micro organisms

8.9.3 MISSION: To design and develop state of the art detection and protection technologies against hazardous materials and micro organisms

8.9.4 CORE COMPETENCE: Detection and protection systems for hazardous materials and micro organisms

Development of integrated pest management and vector control systems

Bioremediation of organic wastes at low temperatures.
8.9.5 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of DRDE. The profile of TIC as follows:

Automation : Completed
Budget : 90 lakhs in Rupees and 90 lakhs Foreign currency
Employees of TIC : 5
Professionals : 3
Readers enrolled : Around 300
Readers daily visit : 25

Collection:

Books : 6700
Journals subscribed : 112
Bound volumes : nil
Technical Reports : 270
Standards : 350
E-Books : -
Classified documents : -

Readers ask for: Books, Journals, Reports
Cadre mostly use: Scientists, Technical officers
Areas of Collection: Chemistry and Life sciences
Services from other TICs: Inter library loan
Services to others: Other DRDO laboratories and nearby academic institutions
### Table 21

#### 8.9.6 **DRDE**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>53</td>
<td>59</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>Staff</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>74</strong></td>
<td><strong>92</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes (91.8%)</th>
<th>No (2.7%)</th>
<th>No Response (5.4%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>63 (85%)</td>
<td>6 (8%)</td>
<td>5 (6.7%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>64 (86%)</td>
<td>7 (9.4%)</td>
<td>3 (4%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>58 (78%)</td>
<td>14 (18.9%)</td>
<td>2 (2.7%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>59 (79.7%)</td>
<td>11 (14.8%)</td>
<td>4 (5.4%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 72 (97.2%)</td>
<td>Good 0</td>
<td>Useful 1 (1.3%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.10 DEHRADUN ZONE : DEFENCE ELECTRONICS
APPLICATION LABORATORY
(DEAL)

8.10.1 DEAL has been engaged in the development of data links, software radio, satellite based systems for communication and imaging and millimetric wave communication systems for the past three decades.

8.10.2 VISION: Be a center of excellence in the field of communication and surveillance technologies.

8.10.3 MISSION: Develop millimetric wave and microwave sensors and systems, anti jam data links and software radios for the services. Establish technologies including software for satellite based communication and surveillance systems.

8.10.4 CORE COMPETENCE: Design and development of data links
Development of communication systems
Development of satellite based systems
Radio wave propagation.
TECHNICAL INFORMATION CENTRE:

DEAL Technical Information Centre is considered to be one of modern information centres in the field of Electronics and Telecommunications, Computer Science and allied subjects. Presently this library is subscribing to 25,000 bound volumes and journals.

It has recently completed renovation programme, which has resulted in addition of new floor for journal section. Air conditioned reading room and modern ergonomically designed furniture has been placed for comfortable reading.

The library has also been computerized using an integrated multi-user library management system that supports all in-house operations of the library. The automation includes member registration, requisitions of new items and their approval, accessioning and cataloguing. Reservation and issue return of documents, order generation and maintenance of details pertaining to inter-library loan, orders to vendors etc. It has the modules of Acquisition, Cataloguing, Circulating, Serials, Article indexing and OPAC.

All the users of TIC can submit their requisitions of services using the local area network of DEAL.
8.10.5  TECHNICAL INFORMATION CENTRE

Automation : Completed
Budget : 50 lakhs
Employees of TIC : 6
Professionals : 4
Readers enrolled : Around 300
Readers daily visit : 20

Collection:
Books : 15000
Journals subscribed : 225
Bound volumes : 17000
Technical Reports : 4200
Standards : 1200
E-Books : -
Classified documents : Yes

Readers ask for: Books, Journals
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Electronics, Telecommunications, Computer Science etc.
Services from other TICs: Inter library loan
Services to others: nil
8.10.6 **DEAL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>86</td>
<td>97</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>72</td>
<td>95</td>
</tr>
<tr>
<td>Staff</td>
<td>27</td>
<td>38</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>191</td>
<td>240</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>146 (76%)</td>
<td>38 (19.8%)</td>
<td>7 (3.6%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>153 (80%)</td>
<td>21 (10.9%)</td>
<td>17 (8.9%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>132 (69%)</td>
<td>46 (24%)</td>
<td>13 (6.8%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>111 (58.1%)</td>
<td>63 (32.9%)</td>
<td>17 (8.9%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 174 (91%)</td>
<td>Good 9 (4.7%)</td>
<td>Useful 6 (3%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.11 DEHRADUN ZONE : DEFENCE RESEARCH LABORATORY (DRL)

8.11.1 DRL is engaged in developing appropriate technologies in the field of health, environment and agriculture for the troops in the North-East region.

8.11.2 VISION: Be a leader in developing technologies for human health, environment and agriculture for the North East region.

8.11.3 MISSION: Develop technologies unique to local environment in the field of health and hygiene and judicious utilization of local resources for the benefit of the region.

8.11.4 CORE COMPETENCE: Evolving eco friendly technologies for vector control

Utilisation of natural resources of the north east region.
The TIC was established to cater the needs of DRL. The profile of TIC as follows:

- **Automation**: Partially completed
- **Budget**: 40 lakhs
- **Employees of TIC**: 2
- **Professionals**: Nil
- **Readers enrolled**: Around 50
- **Readers daily visit**: 10

**Collection:**

- **Books**: 2419
- **Journals subscribed**: 80
- **Bound volumes**: 11029
- **Technical Reports**: Nil
- **Standards**: 300
- **E-Books**: Nil
- **Classified documents**: Nil

Readers ask for: Books, Journals
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Human healthy, Environmental science, Agriculture etc.
Services from other TICs: Inter library loan
Services to others: Yes
<table>
<thead>
<tr>
<th>Cadre of Employees</th>
<th>Number of Employees Responded to Questionnaires</th>
<th>Total Strength of the Cadre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Staff</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes 17 (73%)</th>
<th>No 2 (8.6%)</th>
<th>No Response 4 (17%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>17 (73%)</td>
<td>4 (17%)</td>
<td>2 (8.6%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>21 (91%)</td>
<td>2 (8.6%)</td>
<td>0</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>16 (69%)</td>
<td>5 (21%)</td>
<td>2 (8.6%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>18 (78.2%)</td>
<td>3 (13%)</td>
<td>2 (8.6%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 21 (91%)</td>
<td>Good 2 (8.6%)</td>
<td>Useful 0</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.12 DEHRADUN ZONE : DEFENCE INSTITUTE OF
HIGH ALTITUDE RESEARCH
(DIHAR) FORMERLY FIELD
RESEARCH LABORATORY
(FRL)

8.12.1 FRL(DIHAR) has developed expertise in development and propagation of high altitude cold desert agro-animal technologies in Ladakh with a view to provide fresh vegetables, meat and milk to the troops in the region.

8.12.2 VISION: Be a center of excellence in the field of high altitude cold desert agro animal technologies

8.12.3 MISSION: Carry out research in the area of high altitude/cold and agro animal technologies for meeting the needs of the services and improving the economy of region.

8.12.4 CORE COMPETENCE: Development of agricultural and animal husbandry practices for Ladakh

Identification and propagation of sustainable crops and animal genotypes for high altitude cold arid conditions.
The TIC was established to cater the needs of FRL. The profile of TIC as follows:

Automation : Under process
Budget : 10 lakhs
Employees of TIC : 2
Professionals : 1
Readers enrolled : Around 50
Readers daily visit : 10

Collection:
Books : 4398
Journals subscribed : 17
Bound volumes : 0
Technical Reports : 100
Standards : Nil
E-Books : Nil
Classified documents : Yes

Readers ask for: Books, Journals
Cadre mostly use : Scientists, Technical officers, Technical staff
Areas of Collection : Agricultural sciences, animal sciences etc.
Services from other TICs : Inter library loan
Services to others : nil
### Table -24

8.12.6 **FRL(DIHAR): User Opinion**

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Staff</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes 5 (71%)</th>
<th>No 2 (28%)</th>
<th>No Response 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>4 (57%)</td>
<td>1 (14%)</td>
<td>2 (28%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>5 (71%)</td>
<td>1 (14%)</td>
<td>1 (14%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>3 (42%)</td>
<td>2 (28%)</td>
<td>2 (28%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>4 (57%)</td>
<td>1 (14.2%)</td>
<td>2 (28.5%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td><strong>Excellent 6 (85%)</strong></td>
<td><strong>Good 0</strong></td>
<td><strong>Useful 1 (14%)</strong></td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.13 DEHRADUN ZONE: INSTITUTE OF TECHNOLOGY MANAGEMENT (ITM)

8.13.1 The institute earlier known as defence institute of work study, started functioning in 1962. ITM in the present form is functioning since September, 1994 and imparts training and consultancy in management discipline.

8.13.2 VISION: To be a center of excellence in technology management and research

8.13.3 MISSION: To impart training to DRDO scientists and service officers, provide consultancy services to DRDO laboratories and programmes and to carry out research in management discipline.

8.13.4 CORE COMPETENCE: Design of specialized training modules and customized courses in technology management

. Technology forecasting
. Technology Assessment
. Technology Evaluation

Research and Development project management
Management development
8.13.5 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of ITM. The profile of TIC as follows:

Automation: Under process
Budget: 15 lakhs
Employees of TIC: 3
Professionals: 2
Readers enrolled: Around 100
Readers daily visit: 20

Collection:
- Books: 13398
- Journals subscribed: 47
- Bound volumes: 910
- Technical Reports: 400
- Standards: 400
- E-Books: Nil
- Classified documents: Nil

Readers ask for: Books, Journals
Cadre mostly use: Scientists, Technical officers, Technical staff
Services from other TICs: Inter library loan
Services to others: Course participants of various DRDO laboratories
### Table -25

**8.13.6 ITM: User Opinion**

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Staff</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>18</td>
</tr>
</tbody>
</table>

**Potential contributions of TIC towards defence research (1-7)**

<table>
<thead>
<tr>
<th>Questions from questionnaire number I</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>9</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>10</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>8</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>6</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.14 DEHRADUN ZONE : INSTRUMENT RESEARCH AND DEVELOPMENT ESTABLISHMENT (IRDE)

8.14.1 IRDE carries out design and development of state of the art optical and electro optical instrumentation for surveillance, reconnaissance, guidance, target acquisition, weapon aiming and ranging under all weather conditions during day and night.

8.14.2 VISION: Be a center of excellence in the field of optics and electro optical instrumentation systems.

8.14.3 MISSION: Design, develop and deliver state of the art electro optical surveillance and related control systems for meeting the needs of the services. Conduct forward looking research in photonics.

8.14.4 CORE COMPETENCE: Design and Development of fire control systems
Design and development of infra red search and track system
Stand alone systems
Test and evaluation of instruments.
8.14.5 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of IRDE. The profile of TIC as follows:

Automation : Under process
Budget : 15 lakhs
Employees of TIC : 5
Professionals : 2
Readers enrolled : Around 300
Readers daily visit : 20

Collection:

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books</td>
<td>8396</td>
</tr>
<tr>
<td>Journals subscribed</td>
<td>15</td>
</tr>
<tr>
<td>Bound volumes</td>
<td>210</td>
</tr>
<tr>
<td>Technical Reports</td>
<td>100</td>
</tr>
<tr>
<td>Standards</td>
<td>400</td>
</tr>
<tr>
<td>E-Books</td>
<td>Nil</td>
</tr>
<tr>
<td>Classified documents</td>
<td>Nil</td>
</tr>
</tbody>
</table>

Readers ask for: Books, Journals
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Instrumentation, Surveillance, guidance, weapons, photonics etc.
Services from other TICs: Inter library loan
Services to others: nil
Table -26
8.14.6 **IRDE**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES Responded to Questionnaires</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>98</td>
<td>112</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>143</td>
<td>161</td>
</tr>
<tr>
<td>Staff</td>
<td>49</td>
<td>52</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>296</td>
<td>334</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)</td>
<td>196 (66%)</td>
<td>62 (20.9%)</td>
<td>38 (12.8%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)</td>
<td>221 (74.6%)</td>
<td>59 (19.9%)</td>
<td>16 (5.4%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)</td>
<td>194 (65%)</td>
<td>88 (29.7%)</td>
<td>14 (4.7%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)</td>
<td>201 (67.9%)</td>
<td>84 (28.3%)</td>
<td>11 (3.7%)</td>
</tr>
<tr>
<td>Overall opinion (35)</td>
<td>Excellent 221 (74%)</td>
<td>Good 61 (20%)</td>
<td>Useful 12 (4.0%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.15 DEHRADUN ZONE: TERMINAL BALLISTICS RESEARCH LABORATORY (TBRL)

8.15.1 TBRL is engaged in the development of technologies related to conventional and non-conventional warheads and carryout transient phenomenon studies.

8.15.2 VISION: Transform the laboratory into a center of excellence in the field of detonics and shock waves.

8.15.3 MISSION: Develop expertise and critical technologies related to all types of warheads including facilities for studies of transient phenomenon.

8.15.4 CORE COMPETENCE: Evaluation of terminal ballistics

Design and development of explosive devices and processes.
8.15.5 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of TBRL. The profile of TIC as follows:

Automation : Partially completed
Budget : 20 lakhs
Employees of TIC : 6
Professionals : 2
Readers enrolled : Around 300
Readers daily visit : 50-70

Collection:

Books : 6980
Journals subscribed : 73
Bound volumes : 5336
Technical Reports : 8646
Standards : 1390
E-Books : Nil
Classified documents : Nil

Readers ask for: Books, Journals, Reports, Standards
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Armaments, Explosives, Electronics, High Speed photography etc.
Services from other TICs: Inter library loan
Services to others: nil
Table -27
8.15.6 **TBRL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>89</td>
<td>100</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>57</td>
<td>68</td>
</tr>
<tr>
<td>Staff</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>173</td>
<td>209</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>148 (85%)</td>
<td>18 (10.4%)</td>
<td>7 (4%)</td>
</tr>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>151 (87%)</td>
<td>19 (10.9%)</td>
<td>3 (1.7%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>156 (90%)</td>
<td>9 (5.2%)</td>
<td>8 (4.6%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>98 (56%)</td>
<td>64 (36.9%)</td>
<td>11 (6.3%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>111 (64%)</td>
<td>51 (29.4%)</td>
<td>11 (6.3%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 164 (94.7%)</td>
<td>Good 6 (3.4%)</td>
<td>Useful 3 (1.7%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
DEHRADUN ZONE - OVERALL OPINION ON TECHNICAL INFORMATION CENTRES

- Excellent: 87%
- Good: 10%
- Useful: 2%
- Not Satisfied: 1%

 DIAGRAM - 8
DEHRADUN ZONE-OVERALL OPINION ON TECHNICAL INFORMATION CENTRES

DIAGRAM - 9

LABORATORIES

DARL
DEAL
DRL
DRDE
ITM
IRDE
ERL
TRL

EXCELLENT
GOOD
USEFUL
NOT SATISFIED

USERS RESPONDED

250 200 150 100 50 0
8.16 DELHI ZONE : CENTER FOR FIRE EXPLOSIVES AND ENVIRONMENT (CEFEES)

8.16.1 CEFEES functions as a regulatory and compliance monitoring body for defence establishments for fire, explosive and environmental safety. It has expertise in the field of environmental engineering and monitoring, fire science and explosive safety.

CEFEES was created by merger of 3 erstwhile establishment viz computer center, directorate of explosives safety fire advisors office, DIFR.

8.16.2 VISION : Be a center of excellence in the field of fire science and engineering, explosive and environment safety.

8.16.3 MISSION : Design, development, testing and evaluation of fire safety equipment and systems. R & D in management of hazardous wastes. To function as a regulatory body for the Ministry of Defence establishments in explosives and environment safety.

8.16.4 CORE COMPETANCE :
Design and development of fire suppression systems/ specialized fire appliances and equipment.

Design and development of safe structures, storage and process buildings for explosives.

Environmental monitoring and hazard management
The charger of duties of CFEES are

To proved integrated advice and create safety on matters of environment, explosive and fire safety in all defence establishments.

To undertake R & D activities in area of environment, explosives and fire service.

To approve explosives and fire safety aspects of plans for construction of new facilities.

To enforce compliance of statutory rules and applicable safety standards including safety review.

To provide consultancy to government departments on explosive/ fire/ environment safety related matters

To train defence personnel of the services, inter service organization, ordnance factories and other defence undertakings in fire prevention, fire fighting, and allied subjects.

CFEES has been granted ISO 9001 certificate for designing and conducting training program in various disciplines of fire safety.
8.16.5 _TECHNICAL INFORMATION CENTRE_

The TIC of CEFEES was established to cater the needs of CEFEES. The profile of TIC is as follows:

Automation : Not Done
Budget : 25 lakhs
Employees of TIC : 3
Professionals : 1
Readers Enrolled : 250
Readers daily visit : About 40

COLLECTION:
Books : 5000
Journals subscribed : 20
Bound Volumes : 200
Technical Reports : 500
Standards : 4000
E-Books : Nil
Classified documents : Nil

Readers mostly ask for, Books, Journals, Reports, Standards
Cadre of employees mostly use TIC are : Scientists
Areas of Collection : Fire Sciences and Environmental Sciences
Services used from other TICs : Inter library loan, Photocopies etc.
Services to others : Other DRDO TICs are using the services.
Table -28

8.16.6 CEFEES : User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>38</td>
<td>45</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>19</td>
<td>30</td>
</tr>
<tr>
<td>Staff</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>61</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>58</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>44</td>
<td>22</td>
<td>4</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>59</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent</td>
<td>Good</td>
<td>Useful</td>
</tr>
<tr>
<td></td>
<td>67</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.17 DELHI ZONE : DEFENCE INSTITUTE OF 
PSYCHOLOGICAL RESEARCH (DIPR)

8.17.1 DIPR has been providing support to the services in the selection of personnel and related areas of military psychology.

8.17.2 VISION: Be a center of excellence in the field of military psychological studies.

8.17.3 MISSION: To carryout advanced research in the areas of application of psychological techniques in personnel selection and enhancing motivation and morale of troops for operational efficiency.

8.17.4 CORE COMPETENCE: Formulation of personnel selection schemes
Organisational behaviour
Human factors research.
8.17.5 TECHNICAL INFORMATION RESOURCE CENTRE

DIPR has an exclusive psychology library with over 7000 books, 400 psychological tests, 15000 volumes and reference materials. The library also subscribes to a large number of Indian and foreign psychology and related professional journals. It serves as an ideal facility for research work and general study with Internet facility.

The TIRC was established to cater the needs of DIPR. The profile of TIC as follows:

- Automation : Under process
- Budget : 45 lakhs
- Employees of TIC : 5
- Professionals : 2
- Readers enrolled : Around 100
- Readers daily visit : 20

Collection:

- Books : 7390
- Journals subscribed : 37
- Bound volumes : 1500
- Technical Reports : 300
- Standards : 360
- E-Books : Nil
- Classified documents : Nil

Readers ask for: Books, Journals

Cadre mostly use: Scientists, Technical officers, Technical staff

Areas of Collection: Psychology, clinical sciences, etc.

Services from other TICs: Inter library loan
### Table -29

#### 8.17.6 DIPR : User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Staff</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes 26 (83.3%)</th>
<th>No 3 (9.6%)</th>
<th>No Response 2 (6.4%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>24 (77%)</td>
<td>4 (12.9%)</td>
<td>3 (9.6%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>27 (87%)</td>
<td>2 (6.4%)</td>
<td>2 (6.4%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>19 (61%)</td>
<td>9 (29%)</td>
<td>3 (9.6%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>22 (70.9%)</td>
<td>7 (22.5%)</td>
<td>2 (6.4%)</td>
</tr>
</tbody>
</table>

| Overall opinion (35)*                                        | Excellent 28 (90%) | Good 0 | Useful 3 (9.6%) | Not Satisfied 0 |

*indicates questions from questionnaire number I
8.18 DELHI ZONE : DEFENCE INSTITUTE OF
PHYSIOLOGY AND
ALLIED SCIENCES (DIPAS)

8.18.1 DIPAS is engaged in research in the field of physiology, biochemistry and nutrition with a view to optimize adaptation and performance of troops under extreme environmental conditions.

8.18.2 VISION: Be a center of excellence in the field of environmental physiology and human factors research.

8.18.3 MISSION: Optimisation of human performance in different occupational environment conditions using physiological, biochemical, nutritional and ergonomic approach.

8.18.4 CORE COMPETENCE: Physiological adaptation to environmental stress

Human engineering for effective man machine interface.
8.18.5 TECHNICAL INFORMATION CENTRE

The Technical Information Centre of DIPAS was established to serve the information needs. The profile of TIC are as follows:

Automation : Not Done
Budget : 50 lakhs
Employees of TIC : 3
Professionals : 3
Readers enrolled : 201
Readers daily visit : 8-10

Collection :
- Books : 20,000
- Journals subscribed : 87
- Bound volumes : 15000
- Technical Reports : 150
- Standards : Nil
- E-Books : Nil
- Classified documents : Yes

Readers ask for: Reports
Cadre mostly use : Scientists, Technical officers
Areas of Collection : Physiology, Biochemistry, Nutrition, Endocrinology, High; altitude psychology, Molecular Biology, experimental medicine and biology etc.
Services used from other TICs : Inter library loan
Services to others: Delhi based sister laboratories
### Table -30

**8.18.6 DIPAS : User Opinion**

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>34</td>
<td>47</td>
</tr>
<tr>
<td>Staff</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>92</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes 49 (74%)</th>
<th>No 14 (21%)</th>
<th>No Response 3 (4.5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>51 (77%)</td>
<td>11 (16%)</td>
<td>4 (6%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>60 (90%)</td>
<td>4 (6%)</td>
<td>2 (3%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>41 (62%)</td>
<td>18 (27%)</td>
<td>7 (10.6%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>49 (74.2%)</td>
<td>14 (21.2%)</td>
<td>3 (4.5%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 61 (92.4%)</td>
<td>Good 4 (6%)</td>
<td>Useful 1 (1.5%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.19 DELHI ZONE : DEFENCE TERRAIN RESEARCH LABORATORY (DTRL)

8.19.1 DTRL has developed expertise for extracting terrain parameters for creation and updation of thematic maps.

8.19.2 VISION: To become a technological leader in producing high resolution terrain intelligence products for defence applications.

8.19.3 MISSION : Develop expertise and technologies for terrain database management. Create and update thematic maps and terrain intelligence reports for the users.

8.19.4 CORE COMPETENCE : Terrain classification and evaluation
Natural hazard assessment
The TIC was established to cater the needs of DTRL. The profile of TIC as follows:

**Automation**: Under process

**Budget**: 15 lakhs

**Employees of TIC**: 3

**Professionals**: 2

**Readers enrolled**: Around 100

**Readers daily visit**: 20

**Collection**:

- **Books**: 6249
- **Journals subscribed**: 47
- **Bound volumes**: 510
- **Technical Reports**: 250
- **Standards**: Nil
- **E-Books**: Nil
- **Classified documents**: Nil

Readers ask for: Books, Journals

Cadre mostly use: Scientists, Technical officers, Technical staff

Areas of Collection: Natural hazards, thematic maps, terrain development

Services from other TICs: Inter library loan

Services to others: nil
Table -31

8.19.5 **DTRL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Staff</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>13</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>14</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>8</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>9</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>Overall opinion (35)</strong></td>
<td><strong>12</strong></td>
<td><strong>2</strong></td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.20 DELHI ZONE: SOLID STATE PHYSICS LABORATORY (SSPL)

8.20.1 SSPL is engaged in the work on solid state materials and devices required by system laboratories for development of weapons and platforms for the last three decades.

8.20.2 VISION: Be a center of excellence in the development of solid state materials and devices.

8.20.3 MISSION: Development and characterization of high purity materials and solid state devices for military applications. Enhance the infrastructure and technology for meeting the future challenges.

8.20.4 CORE COMPETENCE: Design and development of GaAs based microwave devices and circuits

- Design and development of silicon devices
- Development of IR device
- Design and development of ferrite components for microwave application
- Design and development of SAW devices and sensors
- Design and development of MEMS components
- Material development.
8.20.5 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of SSPL. The profile of TIC as follows:

Automation: Partially completed
Budget: 25 lakhs
Employees of TIC: 8
Professionals: 3
Readers enrolled: Around 200
Readers daily visit: 15

Collection:
- Books: 10394
- Journals subscribed: 50
- Bound volumes: 1910
- Technical Reports: 900
- Standards: 600
- E-Books: Nil
- Classified documents: Yes

Readers ask for: Books, Journals
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Physics, Solid state, GaAs, Sensors, MEMS etc.
Services from other TICs: Inter library loan
Services to others: Delhi based sister laboratories
### Table -32

8.20.6 **SSPL** : User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>78</td>
<td>85</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>54</td>
<td>69</td>
</tr>
<tr>
<td>Staff</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>156</td>
<td>190</td>
</tr>
</tbody>
</table>

- **Potential contributions of TIC towards defence research (1-7)***
  - Yes: 137 (87%)
  - No: 14 (8.9%)
  - No Response: 5 (3.2%)

- **Methods of information dissemination (8-12)***
  - 141 (90%)
  - 11 (70%)
  - 4 (2.5%)

- **Usage of TIC (13-19)***
  - 144 (92%)
  - 8 (5.1%)
  - 4 (2.5%)

- **Role of DESIDOC (20-29)***
  - 98 (62.8%)
  - 51 (32.6%)
  - 7 (4.4%)

- **Resource Sharing (30-34)***
  - 101 (64%)
  - 38 (24.3%)
  - 17 (10.8%)

- **Overall opinion (35)***
  - Excellent: 149 (95.5%)
  - Good: 3 (1.9%)
  - Useful: 2 (1.2%)
  - Not Satisfied: 2 (1.2%)

*indicates questions from questionnaire number I
DELHI ZONE - OVERALL OPINION ON TECHNICAL INFORMATION CENTRES

94% EXCELLENT
3% USEFUL
2% GOOD
1% NOT SATISFIED
DELHI ZONE - OVERALL OPINION ON TECHNICAL INFORMATION CENTRES

DIAGRAM - 11

LABORATORIES

USERS RESPONDED

CEFEES  DIPAS  DIPR  DTRL  SSPL

EXCELLENT
GOOD
USEFUL
NOT SATISFIED
8.21 HYDERABAD ZONE : ADVANCED NUMERICAL RESEARCH AND ANALYSIS GROUP (ANURAG)

8.21.1 ANURAG was established on 2\textsuperscript{nd} May 1989 to execute specific time bound project/programs leading to the development of custom designed computing systems and software packages for numerical analysis and other applications.

To design and develop advanced computing systems, especially those based on state of the art concepts like parallel architectures as well as associated systems and sub systems. To develop systems and application software packages for mission oriented tasks to build-up technology in these areas.

To undertake forward-looking research and development in futuristic concepts (eg. Neural networks) and to create an environment and infrastructure which fosters such advanced research leading to the application of advanced computing concepts and technologies to areas relevant to DRDO.

To play an effective role on the national scene vis-a-vis the development of computer technology.

To evolve a laboratory, university, industry collaborative arrangements for the effective execution of projects, involving dynamic improvement technologies.
8.21.2 VISION : To be a center of excellence in advanced computing systems.

8.21.3 MISSION : Design and develop advanced computing systems using parallel processing techniques with indigenous architecture and design of application specific integrated circuits for critical missions.

8.21.4 CORE COMPETENCE :
  Design of application specific integrated circuits
  Design and development of high performance computers

8.21.5 TECHNICAL INFORMATION CENTRE

The TIC of Advanced Numerical Research and Analysis Group was established in the year 1996. The TIC serves information needs of scientists at the laboratory. It develops information systems and databases for defence science and technology. The TIC has organized into three divisions or groups, i.e. TIC, Information services and Information Dissemination. The division of TIC look after the acquisition and organization of books, periodicals, technical reports etc.

The information services group provides up-to-date project oriented information to the scientists. A computer-based information processing and dissemination systems has been developed. A software package called SOUL (Software for University Libraries) used for information retrieval and providing SDI service.
The TIC has been providing translation and reprographic facilities. Translation services are provided for ‘Russian’ language. A translation bank has been set up to collect translations available in other Research and Development establishments of DRDO.

The TICs has facilities for microfilming, projection, audio, video recording, printing etc.

TIC uses extensively various online and CD-ROM databases available in India and abroad for information services. The TIC has facilities for on-line searching of databases through INTERNET.

The major objectives of the TIC:

- To receive and retain all scientific periodicals and developments
- To inform scientists on literature which may be of value to them by issuing a monthly bulletin of abstracts
- To answer specific enquiries from information available at TIC
- To be a repository for reports of scientific work
- To be a channel through which the scientific work of the laboratory is known and available to the rest of the users.

Basically the collection of TIC includes on VLSI, MEMS, Computer graphics, PCBs, Parallel computing, Advanced Engineering, Mathematics, Programming languages, Software engineering, Computer networks, Signal processing, Digital signal processing, systems software, Operating systems, Linux etc.
SERVICES:

The services of TIC includes Current Awareness Service, Content page circulation, Referral service etc.

The following Current Awareness Services are carried by TIC

- Current Bibliography of recent arrivals in the TIC
- Displaying of books, book jackets, latest periodicals etc.
- Newspaper clipping service.

Content page circulation: Photocopying the content pages of the selected periodicals and arranged in a order and circulated to the users.

Bibliography compilation service : TIC provides compilation of ad-hoc bibliographies on specific topics. This services has been availed by individual researchers.

Information Services : TIC provides answers to technical enquiries which are normally fact finding type.

Reprographic Services : The reprographic services of TIC has full range of reprographic services. It has equipment for microfilms, microfiches, slide making and photocopying

Document copy supply services : TIC provides photocopies of scientific papers and reports to the scientists on request. These copies are taken from the holdings of the TIC and other TICs of the region.
TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of ANURAG. The profile of TIC as follows:

Automation : Partially completed
Budget : 5 lakhs
Employees of TIC : 2
Professionals : 1
Readers enrolled : Around 200
Readers daily visit : 15

Collection:

Books : 3061
Journals subscribed : 63
Bound volumes : 1200
Technical Reports : 900
Standards : BIS, MILSTD, ISO
E-Books : Nil
Classified documents : Yes

Readers ask for: Books, Journals
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Physics, Solid state, GaAs, Sensors, MEMS etc.

Services from other TICs: Inter library loan
Services to others: Delhi based sister laboratories
### Table -33

8.21.6 **ANURAG**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>43</td>
<td>46</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Staff</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>48</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes 41 (85%)</th>
<th>No 3 (6.2%)</th>
<th>No Response 4 (8.3%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>42 (87.5%)</td>
<td>5 (10.4%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>44 (91.6%)</td>
<td>0</td>
<td>4 (8.3%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>36 (75%)</td>
<td>4 (8.3%)</td>
<td>8 (16.6 %)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>39 (81.2%)</td>
<td>7 (14.5%)</td>
<td>2 (4.1%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 45 (93.7%)</td>
<td>Good 0</td>
<td>Useful 3 (6.2%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.22 HYDERABAD ZONE : ADVANCED SYSTEMS LABORATORY (ASL)

8.22.1 ASL was established in the year 2001 as a consequence of restructuring of the missile laboratories and the missile programs. Advanced systems laboratory is responsible for design, development and induction of long range AGNI ballistic missiles and development of associated technologies and facilities. The three AGNI reentry technology demonstrators developed and test fired during 1985 to 1992 gave the impetus to design, develop and induct a series of long-range missile systems of AGNI class (A1, A2, A3). AGNI I & II have completed the development flights and are being inducted in the services. The long range AGNI III is under development and the hardware is under qualification for the first development flight.

8.22.2 VISION : ASL shall excel in missile technologies leading to the development of strategic weapon systems with global strike capability. Be a nodal center for development of long range guided missile systems.

8.22.3 MISSION : Develop a family of long range ballistic missile systems to meet the national security concerns. Establish expertise and infrastructure in the area of composite and solid propulsion system.

8.22.4 CORE COMPETENCE :
Design and development of long range missiles
Development of core technologies
8.22.5 TECHNICAL INFORMATION CENTRE:

The Technical Information Centre was established in the year 2001 to cater for the information needs of personnel of ASL. The TIC acting as a repository of information in aerospace and allied fields, it collects, processes, preserves and disseminates the technical information to all the scientists, technical personnel of ASL. TIC aims at keeping and providing up to date information timely to all the personnel of the laboratory through digital and electronic media.

8.22.5.1 SERVICES:

**BIBLIOGRAPHIC SERVICES:**

- Aerospace Engineering
- Propulsion
- Explosives
- Ceramics
- Metallurgy
- Current journal contents
- World Missiles
- Newspaper clippings
- Current periodicals directory of TIC at Hyderabad
- SDI service
8.22.5.2 CD-ROM STANDARDS:

- ASTM COMPLETE SET
- MOD UK DEF STDS COMPLETE SET
- BSI SEGMENTS
- NASA COMPLETE SET
- ISO SEGMENTS

SPECIFICATIONS:

- US MIL COMPLETE SET
- SAE/AMS/AS COMPLETE SET
- AIA/NAS COMPLETE SET

8.22.5.3 Digital Information Resource Centre (DIRC)

SERVICES:

OPAC (Online Public Access Catalogue) is available for facilitating the users to quickly search the required document by author, title, accession number, keyword/subject etc. The facility indicates status of availability of the document.

CAAL (Current aerospace and allied literature) this is a periodical alerting service containing information on nascent trends appearing in the literature. Database can be searched by different fields.

Abstracting Bulletins: Full text articles on CD-ROM/ASL-NET Access to:

- DRONA
- INTERNET
- ASL-NET
Access to E-Journals & E-Books: Online E-journals & E-books through internet and intranet.

Publications on ASL-NET:
- Missile flash - Monthly
- Technology Alert – Monthly
- Aerospace Alert - Monthly
- New Accessions of Books/Reports – Monthly
- Subject Bibliographies – on demand
- Current aerospace and allied literature – Monthly
- Newspaper clippings

Barcode Systems: It has been implemented for fast circulation of books

ONLINE SERVICES OF DIRC:

Web OPAC: Online public access catalogue is available through ASL-NET (http://192.168.3.29/opac.asp Retrieved on 16.03.2005) for users to search the required documents by Author, Title, Acc.No. Keyword, Subject etc. and also the status of current titles and complete holdings of journals available in TIC.

Online Reservation and Renewal of Books: Books can be renewed (up to 30 days) or reserved online though ASL-Net

CAAL: Journal articles can be searched online by keyword or name of journal
Missile Forecast: This is full text database. Information about all world missiles can be searched by name of missiles or type of missiles.

CD-ROM Standard Index: Various standards can be searched by keyword/standard Nos. etc

DRDO Newsletter: English/Hindi newsletters available through ASL-Net.
Technology Focus is also available on ASL-NET
(http://192.168.3.29/new Retrieved on 16.03.2005)

CD-ROM Standards databases:
ASTM, AWS, BIS, BSI, MIL SPEC, NASA, SAE

Conference Proceedings:
AIAA Papers on Propulsion, Guidance & Control
American Society for Composites
IEEE nuclear and space radiation effect

Digital Resources on CD-ROMs:
TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of ASL. The profile of TIC is as follows:

Automation : Completed
Budget : 65 lakhs
Employees of TIC : 3
Professionals : 2
Readers Enrolled : 250
Readers daily visit : About 20

COLLECTION:
Books : 1200
Journals subscribed : 70
Bound Volumes : 200
Technical Reports : 500
Standards : ASTM, BIS, MILSTD, NASA, ISO
E-Books : Yes
Classified documents : Yes

Readers mostly ask for, Books, Journals, Reports, Standards
Cadre of employees mostly use TIC are : Scientists
Areas of Collection : Computers, Missiles, Guidance, Jane’s publications, Avionics, Aeronautics and Astronautics
Services used from other TICs : Inter library loan, Photocopies etc.
Services to others : Other nearby DRDO TICs
Table -34

8.22.6 **ASL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>164</td>
<td>181</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>39</td>
<td>45</td>
</tr>
<tr>
<td>Staff</td>
<td>19</td>
<td>36</td>
</tr>
<tr>
<td>Others</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>231</strong></td>
<td><strong>277</strong></td>
</tr>
</tbody>
</table>

Potential contributions of TIC towards defence research (1-7)*

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>197</td>
<td>21</td>
<td>13</td>
</tr>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>201</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>206</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>164</td>
<td>62</td>
<td>5</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>199</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>209</td>
<td>04</td>
<td>2</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.23 HYDERABAD ZONE : DEFENCE ELECTRONICS
RESEARCH LABORATORY
(DLRL)

8.23.1 DLRL has designed, developed and led to production a number of electronic warfare systems for the three services during the last 25 years.

8.23.2 VISION: Be a center of excellence in the field of electronic warfare.

8.23.3 MISSION: Design and develop state of the art integrated electronic warfare systems for the services and achieve self reliance in critical technologies and components.

8.23.4 CORE COMPETENCE: Design and development of electronic warfare systems

Design and development of critical technologies and components required for electronic warfare system.
8.23.5 TECHNICAL INFORMATION CENTRE:

Technical Information Centre of DLRL is one of the largest libraries in the field of electronics and allied subjects specially with reference to Electronic warfare catering to the needs of DRDO scientist. It is a central information agency for collection, processing and dissemination of information to the scientists of DLRL.

CD-ROM Databases
Technical Reports
Standards & Specifications
Patents
Technical Manuals
Microfilms/Microfiches
Translations
Newspaper

8.23.5.2 TRADE CATALOGUES: TIC holds catalogues of over 350 manufacturers list arranged alphabetically. Complete address and representatives address in India is also provided.

8.23.5.3 APPLICATION NOTES: TIC holds collection of application notes from over 2400 manufacturers. Arranged alphabetically by manufacturer, name of the manufacturer, AN number, note name are provided in the catalogue.

Main subject areas covered: Antennas, Communications, computers, electronic warfare, microwaves, radar, signal processing, total quality management etc.
8.23.5.4 SERVICES:

Circulation, Documentation, In-house publications, CD-ROM based information services, Resource Sharing, Reprography, E-Mail facility etc.

In-House Publications:

New Additions lists,  
Current Contents  
SDI  
Newspaper Clippings  
Subject Bibliographies  
State of the art Reports  
Directory of conference proceedings  
Holdings of journals  
Project literature (Directory of manufacturers)  
Application notes etc.

In-House Databases:

Books/Conference Proceedings  
Bound Volume of Journals  
Holdings of journals  
Application notes etc.

Product Literature:

Books/Conference proceedings Database: This database was developed in fox base. The books database contains more than 24,000 records. It gives all the bibliographic details of books/conference proceedings. Search by author, title, subject, accession number or ISBN are possible.
Bound volumes of journal database: This database contains more than 11,000 records. It gives all the bibliographic details of bound volumes. References have been provided for all the title changes of the journal.

Application Notes Database: This database developed in fox base. It contains 2400 records, arranged alphabetically by manufacturer name, AN number, note name are provided in each record. Search by manufacturer, AN number are possibilities.

Product literature database: This database contains bibliographic details of more than 350 manufacturers, arranged alphabetically, compete address and representative’s address in India if any is also provided.

CD-ROM Databases:
IEEE Electronic Library (IEL)
Jane’s Equipment Library
Jane’s Defence Magazines Library
INSPEC Database Library

RESOURCE SHARING:
Inter library loan
Union catalogue of current journals subscribed by DRDO TIC, union catalogue of scientific serials by INSDOC, CD-ROM search for other laboratories, IEL, Jane’s, INSPEC digitized information.
IEE/IEEE ELECTRONIC LIBRARY (IEL): This is a powerful electronic resource accessing publications from the Institution of Electrical Engineers and the Institute of Electrical and Electronic Engineers. IEL contains 4,00,000 articles in over 12,000 publications. IEEE adds 25,000 new pages to IEL every month which builds upon a back file of content published from 1988. IEL contains journals, transactions published by IEEE, IEE since 1988. Conference proceedings published by IEEE and IEE since 1988. IEL database contains complete original page images including charts, graphs, diagrams, photographs. IEL can be searched using subject keywords, author, author affiliation. Search can be broadened or narrowed using Boolean operators, collection, year of publication etc.
TECHNICAL INFORMATION CENTRE

The Technical Information Centre of DLRL was established to cater the needs of its employees. The profile of TIC is as follows:

Automation: Completed
Budget: 175 lakhs
Employees of TIC: 25
Professionals: 17
Readers enrolled: 500
Readers daily visit: 20

Collection:

Books: 24500
Journals Subscribed: 300
Bound volumes: 1200
Technical Reports: 6500
Standards: ASME, ASTM, BIS, ISO, MILSTD
E-Books: Yes
Classified documents: Yes

Readers mostly ask for: Books, Journals
Cadre mostly use TIC are: Scientists and Technical Officers
Areas of Collection: Electronics, Radars, Antennas, Computers
Services used from other TICs: Inter library loan
Services to others: Other nearby DRDO laboratories and HAL,BDL, MIDHANI
Table -35

8.23.6 **DLRL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>154</td>
<td>179</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>281</td>
<td>312</td>
</tr>
<tr>
<td>Staff</td>
<td>76</td>
<td>120</td>
</tr>
<tr>
<td>Others</td>
<td>11</td>
<td>38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>522</td>
<td>629</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes 416 (79.6%)</th>
<th>No 77 (14.7%)</th>
<th>No Response 29 (5.5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>484 (92.7%)</td>
<td>30 (5.7%)</td>
<td>8 (1.5%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>497 (95.2%)</td>
<td>18 (3.4%)</td>
<td>7 (1.3%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>301 (57.6%)</td>
<td>196 (37.5%)</td>
<td>25 (4.7%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>421 (80.6%)</td>
<td>86 (16.4%)</td>
<td>15 (2.8%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td><strong>Excellent 497 (95%)</strong></td>
<td><strong>Good 10 (1.9%)</strong></td>
<td><strong>Useful 11 (2.1%)</strong></td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.24 HYDERABAD ZONE  DEFENCE METALLURGICAL RESEARCH LABORATORY (DMRL)

8.24.1 DMRL was set up 1962 to meet the complex metallurgical requirements of sophisticated weapon systems. It has developed expertise in advanced materials characterization and development, process engineering and performance analysis.

8.24.2 VISION: Be a center of excellence for providing total materials solutions for defence systems

8.24.3 MISSION: To pursue the development of innovative materials and process technologies, related product engineering, supported by research in the fundamental and applied aspects of materials.

8.24.4 CORE COMPETENCE: Knowledge base in the relationship between process, structure, property and performance of materials Design and development of specialty alloys and inter metallic Process development and surface engineering Extractive metallurgy of Ti, Mg and rare earth alloys Product engineering of alloys, ceramics and composite components.
8.24.5 TECHNICAL INFORMATION CENTRE:

The collection of TIC mainly includes on material science, metals, process engineering etc.

8.24.5.1 SERVICES:

CD-ROM Literature search
Metadex
Materials Science Citation Index
INTERNET facility

8.24.5.2 ONLINE DATABASES:

OPAC- 33984 records it contain
Articles on Metallurgy & Materials sciences
DMRL Scientists publications
Metadex from 1966-2004
TECHNICAL INFORMATION CENTRE

The Technical Information Centre of DMRL was established to cater the needs of its employees. The profile of TIC is as follows:

Automation : Completed
Budget : 55 lakhs
Employees of TIC : 12
Professionals : 4
Readers enrolled : 500
Readers daily visit : 20

Collection:

Books : 38100
Journals Subscribed : 150
Bound volumes : 1200
Technical Reports : 12000
Standards : ASME, ASTM, BIS, ISO
E-Books : Nil
Classified documents : Yes

Readers mostly ask for : Books, Journals
Cadre mostly use TIC are : Scientists
Areas of Collection: Metallurgy, Material sciences
Services used from other TICs: Inter library loan
Services to others : Other nearby DRDO laboratories and HAL, BDL, MIDHANI
**Table -36**

8.24.5.3 **DMRL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>77</td>
<td>91</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>102</td>
<td>156</td>
</tr>
<tr>
<td>Staff</td>
<td>58</td>
<td>67</td>
</tr>
<tr>
<td>Others</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>250</strong></td>
<td><strong>331</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes 199 (79.6%)</th>
<th>No 46 (18.4%)</th>
<th>No Response 5 (2%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>203 (81%)</td>
<td>33 (13%)</td>
<td>14 (5.6%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>208 (83%)</td>
<td>24 (9.6%)</td>
<td>18 (7.2%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>186 (74.4%)</td>
<td>58 (23.2%)</td>
<td>6 (2.4%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>211 (84.4%)</td>
<td>31 (12.4%)</td>
<td>8 (3.2%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 227 (90.5%)</td>
<td>Good 8 (3.2%)</td>
<td>Useful 11 (4.4%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.25 HYDERABAD_ZONE: DEFENCE RESEARCH AND DEVELOPMENT LABORATORY (DRDL)

8.25.1 DRDL is the pioneer missile laboratory in the country and has acquired expertise in the area of design and development of tactical missile systems and certain key technologies required for missile systems realization.

8.25.2 VISION: Be a design and development house for missile based weapon systems required for tactical applications from multiple platforms

8.25.3 MISSION: Develop state of the art infrastructure and technologies required for different classes of missiles. Transfer the technology to production agency for guided missile products.

8.25.4 CORE COMPETENCE: Design and development of tactical missile system

Development of key technologies such as, System design and engineering, guided weapon system modeling and simulation, liquid/solid ramjet propulsion, supersonic combustors, Hypersonic research etc.
8.25.6 **TECHNICAL INFORMATION CENTRE:**

The TIC was established in the year 1962-63 to cater for the information needs of personnel of DRDL. The collection of TIC is mainly on aerospace based literature in the form of text books, journals, technical reports, standards, specifications, microforms, CD-ROMs and video cassettes. The task of TIC is to collect, process, preserve and disseminate the technical information.

8.25.6.1 **DIGITAL INFORMATION CENTRE:**

The purpose of any digital library is to provide seamless access to mostly digital information that is available in a particular library utilizing IT gadgets. The TIC has been providing services from CD-ROMs of standards such as ASTM; BSI; EIA/TIA, IEC, Indian Standards, ISO, ITU, MIL Specifications, MODUK, NASA, SAE etc.

Providing access to the table of contents of journals, full text document of missile specifications from missile forecast International and other indexing services.

Digital information services, meeting the requirements of projects and technology directorates by providing hard copies of the standards.

**SERVICES:**

Round the clock access to few CD-ROM standards is being provided, through identified directorates and some standards through network (D-Net).

Access to meeting papers (AIAA)
Access to Technical Reports (4100 nos.)
Access to 23 handbooks
Internet Services etc.
TECHNICAL INFORMATION CENTRE

The Technical Information Centre of DRDL was established to cater the needs of its employees. The profile of TIC is as follows:

Automation : Completed
Budget : 125 lakhs
Employees of TIC :25
Professionals : 10
Readers enrolled :700
Readers daily visit : 20

Collection:

Books : 27312
Journals Subscribed : 208
Bound volumes : 12530
Technical Reports : 15478
Standards : BIS, ASME, ASTM, GOST,
ISO, MILSTD,
E-Books : 134
Classified documents : Yes

Readers mostly ask for : Books, Journals, Reports
Cadre mostly use TIC are : Scientists and Technical Officers
Areas of Collection: Electronics, Radars, Antennas, Computers, Aerodynamics, Mathematics, Engineering etc.
Services used from other TICs: Inter library loan
Services to others : Other nearby DRDO laboratories and HAL,BDL, MIDHANI
### Table -37

8.25.7 **DRDL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>211</td>
<td>288</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>196</td>
<td>229</td>
</tr>
<tr>
<td>Staff</td>
<td>132</td>
<td>164</td>
</tr>
<tr>
<td>Others</td>
<td>17</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>556</td>
<td>713</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes 317 (57%)</th>
<th>No 181 (32%)</th>
<th>No Response 58 (10%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>479 (86%)</td>
<td>55 (9.8%)</td>
<td>22 (3.9%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>504 (90.6%)</td>
<td>33 (5.9%)</td>
<td>19 (3.4%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>302 (54.3%)</td>
<td>215 (38.6%)</td>
<td>39 (7%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>491 (88.3%)</td>
<td>41 (7.3%)</td>
<td>24 (4.3%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 498 (89.5%)</td>
<td>Good 40 (7.1%)</td>
<td>Useful 5 (2.6%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.26 HYDERABAD ZONE: INTERIM TEST RANGE (ITR)

8.26.1 ITR was established in the early 80s for carrying out flight test and evaluation of rockets, missiles and other airborne systems.

8.26.2 VISION: Be a state of the art missile and weapon system test range.

8.26.3 MISSION: To provide safe, reliable and precision launch facility with tracking and telemetry coverage including data acquisition, analysis and display of test results

8.26.4 CORE COMPETENCE: Development of test and evaluation plan and execution of flight test of complex weapon systems, targets.

Development of technologies for launch, data acquisition, and post flight analysis.
8.26.5 TECHNICAL INFORMATION CENTRE

The TIC was established to cater the needs of ITR. The profile of TIC as follows:

Automation : Under process
Budget : 40 lakhs
Employees of TIC : 6
Professionals : 3
Readers enrolled : Around 150
Readers daily visit : 20

Collection:

Books : 6300
Journals subscribed : 45
Bound volumes :
Technical Reports : 500
Standards : Nil
E-Books : Nil
Classified documents : Yes

Readers ask for: Books, Journals
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Telemetry, Data management, Mechanical engineering, Computer science etc.
Services from other TICs: Inter library loan
Services to others: Course participants of various DRDO laboratories
Table -38
8.26.6 ITR: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>46</td>
<td>73</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>Staff</td>
<td>36</td>
<td>42</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td>151</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes 69 (64.4%)</th>
<th>No 31 (28.9%)</th>
<th>No Response 7 (6.5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>71 (66%)</td>
<td>28 (26%)</td>
<td>8 (7.4%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>82 (76.6%)</td>
<td>14 (13%)</td>
<td>11 (10.2%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>48 (44.8%)</td>
<td>51 (47.6%)</td>
<td>8 (7.4%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>81 (75.7%)</td>
<td>23 (21.4%)</td>
<td>3 (2.8%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 97 (90.6%)</td>
<td>Good 6 (5.6%)</td>
<td>Useful 4 (3.7%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.27 HYDERABAD ZONE: NAVAL SCIENCE AND TECHNOLOGICAL LABORATORY (NSTL)

8.27.1 NSTL established in 1969 to work towards design and development of under water weapons and associate systems and structural design of naval platforms.

8.27.2 VISION: To be a center of excellence for underwater weapon technologies and associated systems

8.27.3 MISSION: Design, development, testing, evaluation and leading to production of torpedoes mines and decoys, stealth materials for sea platforms. R & D in the area of surface and subsurface vehicles and torpedoes.

8.27.4 CORE COMPETENCE: Design and development of torpedoes, mines and decoys.

Modeling and environmental engineering.
8.27.5 **TECHNICAL INFORMATION RESOURCE:**

To meet the information requirement NSTL has established a good information center. TIRC is constantly striving to equip.

It is equipped with an Internet facility to get the latest information and is housing 9000 volumes of technical books, and 3800 bound volumes of journals and 3000 standards in hard copy and on CD-ROM.

TIRC is also subscribing 91 different scientific and technical journals. The library information is also available to all scientists over the NSTL local area network.

**TECHNICAL INFORMATION RESOURCE:**

Automation : Under process

Budget : 15 lakhs

Employees of TIC : 7

Professionals : 5

Readers enrolled : Around 300

Readers daily visit : 20-30

Collection:

Books : 9000

Journals subscribed : 190

Bound volumes : 6800

Technical Reports : 3000

Standards : BIS, MILSTD, ISO

E-Books : Nil

Classified documents : YES

Readers ask for: Books, Journals

Cadre mostly use: Scientists, Technical officers, Technical staff

Areas of Collection: Naval Science, torpedoes, mining etc.

Services from other TICs: Inter library loan
### Table -39

8.27.6 **NSTL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>86</td>
<td>93</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>117</td>
<td>156</td>
</tr>
<tr>
<td>Staff</td>
<td>42</td>
<td>54</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>253</td>
<td>318</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>221 (87%)</td>
<td>28 (11%)</td>
<td>4 (1.5%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>199 (78.6%)</td>
<td>36 (14%)</td>
<td>18 (7%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>167 (66%)</td>
<td>71 (28%)</td>
<td>15 (5.9%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>186 (73.5%)</td>
<td>44 (17.3%)</td>
<td>23 (9%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 200 (79%)</td>
<td>Good 35 (13.8%)</td>
<td>Useful 16 (6.3%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.28 HYDERABAD ZONE : RESEARCH CENTRE
IMARAT (RCI)

8.28.1 RCI was established in 1988, to augment the missile development research facilities including control and guidance and homing systems, integration, check-out, hardware systems in loop simulation and environmental test and evaluation facilities.

8.28.2 VISION: Be a center for design and development of medium range surface to surface missiles and homing missile defence system

8.28.3 MISSION: Develop and transfer the technology to production agency for surface to surface and missile defence systems. Establish expertise and state of the art infrastructure in selected technologies (Guidance, control, power systems, instrumentation).

8.28.4 CORE COMPETENCE: Design and development of missile system. Development of core technologies.
8.28.5 TECHNICAL INFORMATION RESOURCE CENTRE:

TIRC of RCI has the vision to provide services as good as the best international library. Towards this goal several initiatives have been taken up. The collection of TIRC is basically on the subjects of electronics, aerospace engineering, computer engineering, mechanical engineering, environmental science, radars, antennas, control systems, material science, composites etc. TIRC is having an open access system.

8.28.5.1 SERVICES:

- Access to the books, journals, reports, standards etc.
- Current Awareness bulletins (i.e. Article alert service, Missile round-up, list of CD-ROMs, list of new arrivals, Missile news, Missile update, list of CD-ROMs etc.

- CD-ROM Services
- Selective Dissemination of Information
- Current Awareness Service
- Inter Library Loan
- Binding/Printing/Xeroxing services
- Access to J-Gate web based portals of 10,000 E-journals
- CD-ROM Services on Mirror Server.
TECHNICAL INFORMATION RESOURCE CENTRE:

Automation : Partially completed
Budget : 35 lakhs
Employees of TIC : 6
Professionals :4
Readers enrolled : Around 700
Readers daily visit : 20-30

Collection:

Books : 13000
Journals subscribed : 130
Bound volumes : 2500
Technical Reports : 3000
Standards : ASME, ASTM, BIS, ISO, MILSTD
E-Books : 23
Classified documents : Yes

Readers ask for: Books, Journals, Reports, Standards
Cadre mostly use: Scientists, Technical officers, Technical staff
Areas of Collection: Electronics, Aerospace, Control and guidance, Mechanical engineering, Computer science etc.
Services from other TICs: Inter library loan
Services to others : Other local DRDO laboratories
### Table 40

8.28.6 **RCI**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>292</td>
<td>307</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>99</td>
<td>101</td>
</tr>
<tr>
<td>Staff</td>
<td>49</td>
<td>61</td>
</tr>
<tr>
<td>Others</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>459</strong></td>
<td><strong>495</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>364</td>
<td>48</td>
<td>47</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>402</td>
<td>44</td>
<td>13</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>397</td>
<td>58</td>
<td>4</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>381</td>
<td>64</td>
<td>14</td>
</tr>
<tr>
<td><strong>Overall opinion (35)</strong></td>
<td><strong>412</strong></td>
<td>34</td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number 1
HYDERABAD ZONE - OVERALL OPINION ON TECHNICAL INFORMATION CENTRES

89%

4%

6%

1%
HYDERABAD ZONE-OVERALL OPINION ON TECHNICAL INFORMATION CENTRES

LABORATORIES

USERS RESPONDED

EXCELLENT
GOOD
USEFUL
NOT SATISFIED

ANURAG
ASL
DLRL
DMRL
DRDL
ITR
NSTL
RCI
8.29 PUNE ZONE: ARMAMENT RESEARCH AND DEVELOPMENT ESTABLISHMENT (ARDE)

8.29.1 ARDE was established in 1958. Is on the threshold of 5th decade of its existence. ARDE embarked on its mission in a rudimentary facility within the campus of ammunition factory, Kirkee and personnel were drawn from erstwhile technical development establishment (ammunition) at Kirkee. In 1966, ARDE moved to its present location at Pashan.

8.29.2 VISION: To become a leading developer of cost effective conventional armament systems, precision and special ammunitions for the services.

8.29.3 MISSION: Develop expertise and technologies required for small arms, guns, rockets and warheads and lead them to induction as per services requirement. Progressively enhance the infrastructure and technological capabilities for meeting the future challenges.

8.29.4 CORE COMPETENCE:

Design, development and integration of weapon systems including ammunitions.
Design and development of special ammunitions.
Development of armament sensors
Ballistics of rockets and projectiles
Test and evaluation.
8.29.5 TECHNICAL INFORMATION CENTRE:

The Technical Information Centre of ARDE was established to cater information needs of personnel of ARDE. The profile of TIC is as follows:

Automation : Completed
Budget : 35 lakhs
Employees of TIC : 16
Professionals : 8
Readers enrolled : 900
Readers daily visit : 60
Readers mostly ask for : Books

COLLECTION:
- Books : 14000
- Journals subscribed : 150
- Bound Volumes : 5500
- Technical Reports : 25000
- Standards : 6700
- E-Books : Nil
- Classified documents : Yes

Readers ask for: Books, Journals, Reports
Cadre mostly use : Scientists, Technical officers, Technical staff
Areas of Collection : Armaments, Medical Engineering, Electronics, Computer science, Management etc.
Services from other TICs : Inter library loan
Services to others : Other local DRDO laboratories
### Table -41

#### 8.29.6 ARDE: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>114</td>
<td>177</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>282</td>
<td>306</td>
</tr>
<tr>
<td>Staff</td>
<td>99</td>
<td>124</td>
</tr>
<tr>
<td>Others</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>511</td>
<td>626</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes 401 (78%)</th>
<th>No 99 (19.3%)</th>
<th>No Response 11 (2.1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>464 (90.8%)</td>
<td>41 (8%)</td>
<td>6 (1.1%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>399 (78%)</td>
<td>78 (15.2%)</td>
<td>34 (6.6%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>286 (55%)</td>
<td>201 (39%)</td>
<td>24 (4.6%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>473 (92.5%)</td>
<td>30 (5.8%)</td>
<td>8 (1.5%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent 499 (97.6%)</td>
<td>Good 7 (1.3%)</td>
<td>Useful 5 (0.9%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.30 PUNE ZONE : DEFENCE LABORATORY (DLJ)

8.30.1 Over the years DLJ has developed expertise in design and development of instruments for nuclear defence, camouflage technologies and water quality monitoring and purification.

8.30.2 VISION: To become a center of excellence in camouflage and radiation monitoring related instrumentation

8.30.3 MISSION: Design and development of multi spectral camouflage and low observable technologies. Design of newer types of radiation sensors and application of radio isotopes

8.30.4 CORE COMPETENCE: Development of instruments for nuclear defence and radiation based technologies.

Development of camouflage technologies

Development of technologies for desert region.
8.30.5 TECHNICAL INFORMATION CENTRE:

The Technical Information Centre was established to cater the needs of Defence laboratory. The profile of TIC is as given below:

Automation: Done
Budget: 50 lakhs
Employees of TIC: 8
Professionals: 4
Readers enrolled: 250
Readers daily visit: 10-15

Collection:
- Books: 15350
- Journals subscribed: 125
- Bound Volumes: 10,580
- Technical Reports: 500
- Standards: 400
- E-Books: Yes
- Classified documents: Yes

Readers mostly ask for: Books, Reports, Journals, Standards

Areas of collection: Isotope application, Camouflage and Desert science

Cadre mostly use TIC: Scientists and Staff

Services used from other TICs: Inter Library Loan
Services to others: DRDO and Jodhpur based libraries
Table -42

8.30.6 **DLJ**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>41</td>
<td>55</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>38</td>
<td>52</td>
</tr>
<tr>
<td>Staff</td>
<td>24</td>
<td>31</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>106</strong></td>
<td><strong>144</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>92</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>(86%)</td>
<td>(3.7%)</td>
<td>(9.4%)</td>
<td></td>
</tr>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>101</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>(95%)</td>
<td>(2.8%)</td>
<td>(1.8%)</td>
<td></td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>97</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>(91%)</td>
<td>(5.6%)</td>
<td>(2.8%)</td>
<td></td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>64</td>
<td>38</td>
<td>4</td>
</tr>
<tr>
<td>(60%)</td>
<td>(35%)</td>
<td>(3.7%)</td>
<td></td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>89</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>(83.9%)</td>
<td>(10.3%)</td>
<td>(5.6%)</td>
<td></td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent</td>
<td>Good</td>
<td>Useful</td>
</tr>
<tr>
<td></td>
<td>99</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>(93%)</td>
<td>(3.7%)</td>
<td>(2.8%)</td>
<td>(1.8%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.31 PUNE ZONE: HIGH ENERGY MATERIALS RESEARCH LABORATORY (HEMRL)

8.31.1 HEMRL is a premier laboratory working in the field of high explosives, propellants, pyrotechnics as well as oxidizers, binders and plasticizers for conventional armaments.

8.31.2 VISION : Be a center of excellence in the field of high energy materials and associated technologies

8.31.3 MISSION : Develop expertise and technologies relating to high explosives, propellants, and pyrotechnics and transfer the technology to industry. Enhance the infrastructure and scientific understanding to meet the future challenges.

8.31.4 CORE COMPETENCE : Development and evaluation of solid propellants for guns, rockets and missiles.

- Gun propulsion
- Rockets and Missiles propulsion
- Development of evaluation of high explosive compositions
- Design and development of pyrotechnics
- Development of explosive reactive armor
- Design and establishment of pilot plant facilities for high energy materials.
TECHNICAL INFORMATION CENTRE:

The Technical Information Centre was established to cater the needs of HEMRL. The profile of TIC is as given below:

Automation: Done
Budget: 21 lakhs
Employees of TIC: 13
Professionals: 5
Readers enrolled: 800
Readers daily visit: 25-30

Collection:
- Books: 8700
- Journals subscribed: 102
- Bound Volumes: 6000
- Technical Reports: 20000
- Standards: 5000
- E-Books: Yes
- Classified documents: Yes

Readers mostly ask for: Books, Reports, Journals

Cadre mostly use TIC: Scientists and Staff

Areas of collection: Isotope application, Camouflage and Desert science

Services used from other TICs: Inter Library Loan
Services to others: Nearby Pune laboratories and institutes
### Table 43

8.31.6 **HEMRL**: User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>108</td>
<td>126</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>199</td>
<td>270</td>
</tr>
<tr>
<td>Staff</td>
<td>48</td>
<td>70</td>
</tr>
<tr>
<td>Others</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>364</td>
<td>480</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>301</td>
<td>48</td>
<td>15</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>304</td>
<td>45</td>
<td>15</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>195</td>
<td>148</td>
<td>21</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>307</td>
<td>49</td>
<td>8</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent</td>
<td>Good</td>
<td>Useful</td>
</tr>
<tr>
<td></td>
<td>308</td>
<td>51</td>
<td>5</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.32 PUNE ZONE: DEFENCE INSTITUTE OF ADVANCED TECHNOLOGY (formerly IAT)

8.32.1 An inter service training cum research institute called Institute of Armament Studies was set up in 1952 for conducting technical staff courses for Army Officers. IAT in present form is functioning since 1964. Focus of the institute is on imparting education and training in various fields of science and technology having bearing on defence applications.

8.32.2 VISION: Be a center of excellence in education, training and research in defence related technology areas.

8.32.3 MISSION: To impart higher education and training to officers of armed forces, DRDO and public sector undertakings and to carry out research in various areas of defence technology with focus on weapons and armament systems.

8.32.4 CORE COMPETENCE: Specialised training modules and courses.
8.32.5 TECHNICAL INFORMATION CENTRE:

The Technical Information Centre was established to cater the needs of DIAT (formerly IAT), the profile of TIC is as follows:

Automation: Completed
Budget: 70 lakhs
Employees of TIC: 16
Professionals: 7
Readers enrolled: 1100
Readers daily visit: 150

Collection:

Books: 44086
Journals subscribed: 214
Bound volumes: 5438
Technical Reports: 16000
Standards: 2000
E-Books: Yes
Classified documents: Yes

Readers mostly ask for: Books, Journals, Reports

Areas of Collection: Applied Science, Military Technology

Cadre mostly use: Students and Staff

Services from other TICs: Inter library loan

Services to others: All DRDO laboratories, NCL, Pune University
**Table -44**

8.32.6 **DIAT** : User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>26</td>
<td>31</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>28</td>
<td>34</td>
</tr>
<tr>
<td>Staff</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Others</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>65</strong></td>
<td><strong>84</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7)*</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>51</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>56</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>39</td>
<td>23</td>
<td>3</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>59</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td>Excellent</td>
<td>Good</td>
<td>Useful</td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
8.33 PUNE ZONE: RESEARCH AND DEVELOPMENT
ESTABLISHMENT (ENGINEERS)
R & DE (E)

8.33.1 R & DE (E) is engaged in the design and development of high performance mobility and counter mobility systems for Combat engineering and launching systems for combat platforms and related technologies.

8.33.2 VISION: Transform the laboratory into a center of excellence in design and development of structural and mechanical engineering systems.

9.33.3 MISSION: Design and develop mobility, counter mobility and launching systems on different platforms for combat engineering applications.

8.33.4 CORE COMPETENCE: Design, development and evaluation of critical technologies required for mobility and counter mobility systems.

Design and development of shelters and platforms for survival in NBC environment

Design and development of launching systems for combat platforms

Design and development of auxiliary power sources
8.33.5 TECHNICAL INFORMATION CENTRE:

TIC provides for information to Director, Officers and Staff of R & DE (Engrs) by procuring, maintaining, circulating all types of reading materials which include books, journals, microfiches, video cassettes, handbooks, manuals, encyclopedias, dictionaries, directories etc.

TIC has attained a significant mile stone by putting all data and making data available to the users through hyperlinks available in intranet consists of over 34,000 records which covers data on 17,000 books, 9000 bound volumes, 1000 microfiches reports, 10,500 standards and 200 newspaper clippings

TECHNICAL INFORMATION CENTRE:

Automation : Completed
Budget : 22 lakhs
Employees of TIC : 10
Professionals : 4
Readers enrolled : 800
Readers visit : 35
Books : 17000
Journals subscribed : 100
Bound volumes : 6000
Technical Reports : 2100
Standards : 22000
E-Books : Yes
Classified documents : Yes

Readers mostly ask for : Books, Journals, Standards
Areas of Collection: Structural Engineering, Hydraulics
Cadre mostly use: All cadre of employees
Services from other TICs : Inter library loan
Table -45

8.33.6 **R & DE(E)** : User Opinion

<table>
<thead>
<tr>
<th>CADRE OF EMPLOYEES</th>
<th>NUMBER OF EMPLOYEES RESPONDED TO QUESTIONNAIRES</th>
<th>TOTAL STRENGTH OF THE CADRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientists</td>
<td>77</td>
<td>83</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>111</td>
<td>146</td>
</tr>
<tr>
<td>Staff</td>
<td>39</td>
<td>68</td>
</tr>
<tr>
<td>Others</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>234</td>
<td>310</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential contributions of TIC towards defence research (1-7) *</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>196 (83.7%)</td>
<td>27 (11.5%)</td>
<td>11 (4.7%)</td>
</tr>
<tr>
<td>Methods of information dissemination (8-12)*</td>
<td>201 (85%)</td>
<td>28 (11.9%)</td>
<td>5 (2.1%)</td>
</tr>
<tr>
<td>Usage of TIC (13-19)*</td>
<td>199 (85%)</td>
<td>31 (13.2%)</td>
<td>4 (1.7%)</td>
</tr>
<tr>
<td>Role of DESIDOC (20-29)*</td>
<td>101 (43%)</td>
<td>111 (47%)</td>
<td>22 (9.4%)</td>
</tr>
<tr>
<td>Resource Sharing (30-34)*</td>
<td>201 (85.8%)</td>
<td>27 (11.5%)</td>
<td>6 (2.5%)</td>
</tr>
<tr>
<td>Overall opinion (35)*</td>
<td><strong>Excellent</strong></td>
<td><strong>Good</strong></td>
<td><strong>Useful</strong></td>
</tr>
<tr>
<td></td>
<td>216 (92%)</td>
<td>9 (3.8%)</td>
<td>4 (1.7%)</td>
</tr>
</tbody>
</table>

*indicates questions from questionnaire number I
PUNE ZONE - OVERALL OPINION ON TECHNICAL INFORMATION CENTRES

91%
6%
2%
1%

EXCELLENT
GOOD
USEFUL
NOT SATISFIED
PUNE ZONE-OVERALL OPINION ON TECHNICAL INFORMATION CENTRES

DIAGRAM - 15

- Excellent
- Good
- Useful
- Not Satisfied

LABORATORIES

ARDE DLJ HEMRL IAT R&D(E)

USERS RESPONDED

0 100 200 300 400 500 600