

## Training Course in Reprography/Scientific Photography

Scientific photography and various reprographic systems have a very important role in the R&D work. While the latest photographic techniques are needed in the study of materials and some other scientific phenomena, reprographic systems are essential in the dissemination of scientific and technical information. In view of this importance, DESIDOC has organised a ten-day training course in reprography/scientific photography for the benefit of concerned staff in the DRDO Labs/Estts, from 14 to 20 Dec 1981. The course was designed to equip the trainees with the latest techniques in reprography, micro-filming, film processing and colour photography. Due emphasis was laid in practicals supported by necessary theory to give the participants a clear idea of the concepts and some practice in using the techniques. Since it was felt that individual attention could be paid to the trainees if they are in a small number, the course was organised for the DRDO Labs/Estts situated in North India. This course is expected to be repeated to cover the concerned staff of other DRDO Labs also. The course was inaugurated by Prof. M. Krishnamurthy, Chief Controller Research and Development, Ministry of Defence.

More than half of the course period was devoted to practicals and the facilities for practicals were provided in DESIDOC. The theory covered the following topics:

- (i) Basic problems in photography.
- (ii) Camera design, shutters, lenses.
- (iii) Contact and projection printing.
- (iv) Negatives, exposure and filters.
- (v) Sensitive materials, developers.
- (vi) Colour photography.
- (vii) Modern reprographic processes including micrographics.
- (viii) Reproduction aspects of photoprints and drawings.
- (ix) Slide preparation and selection of equipment.

The practical assignments included :

- (i) Exposure, processing and printing of black and white films.
- (ii) Processing of negative films and exposing of reversals.
- (iii) Exposure of colour material negatives and printing of colour films and slides.
- (iv) Slide making.

(Contd. on Page 3)

## INFORMATION SEARCH

Information on the following subjects/topics was collected from the literature available in the Defence Science Library (DESIDOC) and supplied to the DRDO scientists on their request :

1. Acquisition of weapons
2. Anti-armour weapons
3. Nickel cadmium batteries
4. Space furnace
5. Development of aerial mast
6. Troposcatter communication
7. Oblique penetration of projectiles
8. Military computers.

## SDI BULLETIN

### *Armoured Fighting Vehicles*

Three bulletins on this subject were issued. These contain information on fire control systems for main battle tanks, planning for a new generation of combat vehicles, future of light tank and tank tracks.

### *Missile Technology*

This bulletin gives information on development of various systems for MLRS. MLRS consists of over 25 tons of electronic and mechanical rocket wizardry capable of raining a massive payload of munitions at ranges in excess of 30 km. Introduction of Vertical Launching System (VLS) on aegis cruisers has also been discussed.

The Hornets' (latest tactical fighter F/A-18) tactical avionics, with its digital technology that allows the aircraft to fulfil a multi-mission requirement has been described. Information on USAF's shipborne radar developed to collect data on Soviet strategic ballistic missile tests is also given.

#### Military and Naval Aircraft

Four bulletins on this subject deal with remotely piloted vehicles, aerial targets, tactical reconnaissance, aircrafts, Soviet aerospace weapons, new in army aviation, F-16 improvement programme and F-18.

#### Military Organisation and Warfare

Two bulletins discuss the role of tactical transport helicopters, mobility in the battlefield and improved mine detector for desert.

Sixteen other SDI bulletins dealing with aeronautics, armaments, laser, military electronics, Naval problems and science policy and planning were also issued.

### LIBRARY ACTIVITIES

Seventy-six books and 339 reports were acquired for the Defence Science Library during the period. The books covered various subject areas like polymers, chemical technology, atmospheric chemistry, fibre optics, digital image processing, computers, adhesives, terrain evaluation, documentation and information retrieval, technical documentation standards and astronautics.

About 687 publications were issued during the period on loan to various scientists, DRDO Directorates at HQ and Labs/Estts besides attending to 160 technical queries.

### TRANSLATION ACTIVITIES

The following books/articles were translated during December 1981 and January 1982 :

S. No.	Title/Author	Indenting Unit	Pages Translated
<b>RUSSIAN</b>			
1.	Across the barrier of weightlessness. <i>Aviatsiya i Kosmonavtika</i> , 3, 1981, 40-41.	SA to CAS	2
2.	Plastics on cross-linked Polyimide base by Yu A Mikhailin and EB Trostyanskaya. <i>Plast. Massy</i> , Oct 1978, 18-24.	DSC, Delhi	7
3.	Classified documents.	SA to CAS	125
4.	System of programmes for the calculation of characteristics of jet engine by VI Yankin, Chapter II—Characteristics of systems of procedures.	CRE, Sunabeda	18
5.	New heterochain polymers on fatty acids cyclic imide base by IA Arkhipova, <i>et al.</i> <i>Uspekhi Khimii</i> , 47, 1978, 705-738.	DSC, Delhi	13
6.	Heat resistant and refractory titanium alloys : study of physico-chemical processes in the manufacture of granules of refractory nickel alloys and their products by AF Belov, <i>et al.</i>	DMRL, Hyderabad	12
<b>GERMAN</b>			
1.	Present state and development trends for the welding of titanium and its alloys by Dr Klaus Rudinger ("Schweissen und Schneiden", 9/75, 1-4). Report issued by Thyssen Edelstahlwerke, Ag. No. 6352/1.	DSC, Delhi	4
2.	Effect of design and production techniques, especially welding techniques, on the corrosion behaviour of titanium by Dr Klaus Rudinger ("Schweissen und Schneiden", 11/75, 1-4). Report issued by Thyssen Edelstahlwerke, Ag. No. 6352/2.	-do-	4
3.	Studies on welding stock and additive prepared from titanium material with a view to specific use in production of chemical apparatus by D. Fischer & K. Rudinger (DVS-Berichte, 50/1978, 1-11). <i>Deutscher Verlag fur Schwei/3 technik</i> issued by Thyssen Edelstahlwerke No. 6352/6.	-do-	11

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| 4. Thixotropic coating materials by W. Goetze "Chemischen Rundschau" 13, 1960, 3-10.   | NCML, Bombay | 8 |
| 5. Observations on Analysis of normal shock waves in a gas particle mixture by T.D. Verma and N.K. Chopra, ZAMP, 18, 650(1967) by Barbara Schmitty and V. Schubert, ZAMP, 20/18, 272-275.                | DSC, Delhi   | 4 |
| 6. The structure of normal shock wave propagation in a gas particle mixture has been obtained by including the particle volume effect. Abstract of paper from English to German for publication in ZAMP. | -do-         | 1 |

#### FRENCH

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|--|--------------|----|
| 1. Data on biochemistry of oligostment.                      | INMAS, Delhi | 9  |
| 2. Shaped charge physics experimental results.               | ERDL, Pune   | 42 |
| 3. Problem of preservation technique of fungi after harvest. | DFRL, Mysore | 12 |
| 4. Analysis of the UFO data treatment problems.              | SA to CAS    | 32 |
| 5. Study of the unidentified aerospace phenomena in US.      | SA to CAS    | 32 |

#### JAPANESE

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|--|----------------------------------|---|
| 1. An analysis and experiments of thermal residual stress in the unidirectional fibre reinforced composite.  | ADE, Bangalore<br>DMSRDE, Kanpur | 7 |
| 2. The liquid phase oxidation of 1, 2, 4, 5-tetramethylbenzene with the transition metal bromide catalysts in acetic acid by T. Nakayam, <i>et al.</i> | DSC, Delhi                       | 6 |

#### PAPERS PRESENTED

The following papers were presented at the Conference/Seminar mentioned :

- | Title   | Conference/Seminar   |
|---|--|
| 1. Users' training for on line bibliographic search systems by VK Rangra, Scientist.  | 13th IASLIC Conference held at Waltair from 30 Dec 1981 to 2 Jan 1982.       |
| 2. User education and training programme in a research and reference library with special reference to DRDO by SN Mehta, Scientist. | -do-   |
| 3. Patent literature as a source of information; its searching and utilization by KC Garg, SSA.                                     | National Seminar on Patent Systems held at RRL, Hyderabad on 28-29 Nov 1981. |

(Contd. from Page 1)

The faculty comprised of S/Shri P.V. Rao, V.K. Rangra, R.L. Mukhi, Scientists of DESIDOC and T. Kashinath, formerly Director, Photo Division, Ministry of Information & Broadcasting, V. Ramachandran, Scientist, INSDOC, M.R.R. Chary, Deputy Director, National Archives and R.K. Bose, Cinematographer, T.V. News and Features, Defence Colony.

The trainees were given a test after completion of the course. The feedback provided by the participants on the course indicated that the course was very useful. The trainees however felt that 10-day duration for the course was too small.

#### OTHER CURRENT AWARENESS SERVICES

The publications entitled 'Spot News on China' containing information on developments in China and 'Science and Technology in Pakistan' highlighting the scientific activities in Pakistan were brought out and circulated to the scientists concerned.

Information on DRDO, Defence, and Science and Technology reported in daily newspapers was scanned and 1055 selected items were brought to the notice of the top management in DRDO.

#### LECTURES DELIVERED

- (i) Shri B.K. Bhardwaj, JSO—on 'Standardization as Information Service' at DESIDOC on 22 Dec 1981.
- (ii) Shri S.P. Rawal, JSO—on 'Science Policy in China' at DESIDOC on 18 Jan 1982.

## TECHNICAL FILMS

Two technical films 'Public Speaking' and 'How to give a more persuasive presentation' were screened on 16 Dec, 1981 for the benefit of DESIDOC officers and staff.

## PRINTING ACTIVITIES

Printing and binding jobs received from the office of the Scientific Adviser to Defence Minister and Institute of Systems Studies and Analysis (ISSA) were executed in addition to DESIDOC publications. In all, jobs covering about 365 pages were printed.

## PARTICIPATION IN CONFERENCES

S/Shri G.S. Sharma, Sci. 'D', R.K. Paul, Sci. 'D', B.N. Bahadur, Sci. 'C' and A. Bandyopadhyay, Sci. 'C' attended the Annual Conference and Convention of the Society for Information Science held at RRL, Hyderabad from 25-26 Nov, 1981.

## FORTHCOMING CONFERENCES (1982)

S. No.	Conference	Date	Details available from
1.	EURIM5: A European Conference on Research on Information Management (Versailles-France)	May 12-14	Aslib 3 Belgrave Square, London.
2.	Special Libraries Asso. 73rd Annual Conference (Detroit-USA)	June 5-10	SLA 235, Park Avenue South, New York, NY-10003.
3.	4th International Study Conference on Classification Research (Augsburg-Germany)	June 28- July 3	FID/CR Sectt Woogstrasse 36a D-6000 Frankfurt.
4.	48th General Conference of the International Federation of Library Asso. and Institutions (Montreal-Canada)	Aug 23-28	IFLA Sectt POB 82128 NL-2508 EC. The Hague the Netherlands.
5.	6th International Conference on the strength of metal and alloys- ICSMA-6 (Melbourne-Australia)	Aug 16-20	The Director, Australian Instt. of Metals, 191, Royal Parade Parkille 3052 Australia.
6.	13th Congress of the International Council of the Aeronautical Sciences (California-USA)	Aug 30- Sept 3	A.I.A.A. Meetings Dept. 1290 Av of American, New York, NY-10019.

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