

Place Visited: Combat Vehicle Research and Development Establishment,
Avadi, Chennai-54.

Date: 23-03-2010

Time: 1400-1730 hrs

Accompanying Faculty: K.Purushothaman/ Professor
St.Peter Engineering College

Persons met:

Mr Radhakrishnan , Technical Officer

Significant learning:

INTRODUCTION:

SAE INDIA (SOUTHERN SECTION) organized the factory visit to CVRDE, Avadi on 23rd March 2010. About 60 student members from various colleges participated in the factory visit. The factory visit was hosted by St.Peter's Engineering College. The factory visit was co-ordinated by Mr.Paullinga Prakash (Faculty Advisor – St.Peter's Engineering College). The main idea of the factory visit was to show the student members of SAE some of the various proceedings happening in CVRDE.

THE START:

The factory visit started on 23rd Mar 2010 at 12:30 pm and all the students were asked to get assembled in Avadi bus stand by 1:00 pm. After verification of the registration process the students were taken to CVRDE by 1:30 pm. The students got assembled in CVRDE office and verification was done. After verification by CVRDE authorities the students were taken to conference hall in CVRDE by 2:15 pm.

INSIDE CONFERENCE HALL:

A brief lecture on CVRDE was given by Mr.Srinivasa Rao (CVRDE Authority & Treasurer SAEISS). The lecture covered various aspects of CVRDE including its origin, establishment, chronology of events, administration, projects, prototype production units, facilities in CVRDE, design process etc. Mr.Srinivasa Rao started his presentation by giving a brief introduction regarding the origin of CVRDE. He then discussed about the various combat vehicles included in service from CVRDE. These vehicles include Armored Patrol Car, Armored Recovery Vehicle, 130mm gun catapult, Carrier Mortar tracker, Bridge Layer Tank, ajeya, BHIM, Akash, and last but not the least MBT Arjun.

ABOUT MBT ARJUN:

Mr.Rao then gave a brief lecture on the most advanced tank ever built by India, MBT Arjun.MBT means Main Battle Tank and Arjun comes from epics 'Mahabharata'. describing about Arjun, it is a 1400 HP 10 cylinder turbocharged diesel engine vehicle. The power to weight ratio is one of the largest 24:1.The vehicle has hydro gas suspension.MBT Arjun uses Laser Homing Anti-Tank (LAHAT) missile for its firing unit. His lecture on Arjun was very informative and he justified why Arjun is sure the most advanced tank of all.

OTHER PROJECTS:

Later Mr.Rao described of other important projects done by CVRDE other than tank production. In this session he first discussed about aircraft projects like aircraft mounted accessory gearbox, hydraulic filters, power take of shaft, 5KW generator, bearing etc. He continued with explaining the various simulation arrangements made in CVRDE for research & testing. He also explained about the alternative power pack for MBT Arjun.

FACILITIES AVAILABLE:

Mr.Rao then continued about the the various facilities and machinery arrangements found in CVRDE. The facilities include prototype shop, engine transmission test bed, light and heavy machine shop, CAD generation of engineering drawings, solid modeling, FEM stress analysis, CNC machining, Fuel injection pump test rig, Endurance test rig, Altitude test rig etc. Mr.rao concluded his lecture by describing the various departments involved in tank production. Mr.Rao's presentation was continued by a tea break of 15 mins at 3 pm.

INSIDE DISPLAY UNIT:

The students were then taken to a display unit located next to the conference hall by 3:15 pm. Inside the display hall the various parts of a tank were placed separately and their composition were explained. The display items includes piston, connecting rod, crankshaft, camshaft, V10 engine, V12 engine, Fuel injection pump, Oil filter, Air filter, Air cleaner, cooling fan, torque converter, sprocket drum assembly, hydro-gas suspension system, turret drive gearbox, hydraulic motor brake, volute casing etc. The display also contained the prototype models of some of the tanks like Arjun, BHIM, Bridge Layer Tank etc.

The students were then taken to the real-time prototype

models of the tanks and were allowed to see the inner arrangements in the tanks. This gave the students an opportunity to see the inner model of the tank. The students were then taken to the nearby workshop to see the various machines used in the manufacturing of some of the key components of tanks like bolts, nuts, strut for suspension etc. The students left the factory by 4:45 pm.

CONCLUSION:

The factory visit thus gave the students an opportunity to see the various proceeding in CVRDE, Avadi and also gain knowledge regarding the various parts in the tanks, different types of tanks, machineries for manufacturing, designing of the products in CVRDE, facilities available for research in CVRDE & various projects done by CVRDE. The factory visit gave a clear description about the MBT Arjun Tank and its various facilities available for combat purposes. The factory visit is for sure a treasure house for knowledge regarding the defense facilities of our country.

Participating Students

Total no of students:35

No of colleges: 7

List of Students

No	Name	College	Membership no
1	K.VENKATESAN	C.Abdul Hakeem College Of Engg & Tech	
2	M.KAFEE AHMED	C.Abdul Hakeem College Of Engg & Tech	
3	R.UWAISH IRFAZ	C.Abdul Hakeem College Of Engg & Tech	
4	A.RASHID AHMED	C.Abdul Hakeem College Of Engg & Tech	
5	TABRAZ	C.Abdul Hakeem College Of Engg & Tech	
6	ganesh	Hindustan Institute of Tecnology and Science	7080425912
7	jesse daniel	Hindustan Institute of Tecnology and Science	7080427288
8	sriram	Hindustan Institute of Tecnology and Science	7080420422
9	nidhin	Hindustan Institute of Tecnology and Science	
10	ashish	Hindustan Institute of Tecnology and Science	
11	Steve Len Vishal.A	KSRCT	7090423402
12	Sharath Saurabh.S	KSRCT	7090423399
13	Kavimozhi.P	KSRCT	7090423363
14	Muralidharan.B.S.	KSRCT	7090423376
15	Logeshwaran.C	KSRCT	7090423366
16	R.Roshan Ram	MNM Jain Engineering College	7080428073
17	V.Pravin Kumar	MNM Jain Engineering College	7090420651
18	D.Dinesh Babu	MNM Jain Engineering College	
19	D.Dinesh Kumar	MNM Jain Engineering College	
20	G.Venkatesh	MNM Jain Engineering College	7080429582
21	G. Keerthiraghuvaran	Sri Ramakrishna Engg College	7090424500
22	R. Mahesh	Sri Ramakrishna Engg College	7090424506
23	S. Somasundaram	Sri Ramakrishna Engg College	7090424493
24	M. Vivekanandhan	Sri Ramakrishna Engg College	7090424440
25	Ajun karpur	Sri Ramakrishna Engg College	
26	Arjun R	SVCE	7090423537
27	Abhishek Srinivas	SVCE	7090423536
28	Karthikeyan M	SVCE	7080427016
29	Saranraj M S	SVCE	7080427003
30	Tamilarasan S	SVCE	7080427010
31	R.Kavin kumar	Sri Krishna Engineering College	
32	K.S.Logeshwaran	Sri Krishna Engineering College	
33	S.J.Manoj Prabhakar	Sri Krishna Engineering College	
34	D.Ravi	Sri Krishna Engineering College	
35	A. Prabhakar	Sri Krishna Engineering College	