

(1)

## CHAPTER-6

---

1990 — 2000  
(1999ent)

The year 1990 ~~is~~ entered into a period of great changes for the country. For me it was the ~~great~~ decade of many changes — many of them ~~the~~ cataclysmic (as they appeared at the time of happening); too many, too fast.

Even as I came into to Delhi, leaving behind ISRO in July 1988, I was treading and running into uncharted territory. But ~~Delhi~~ the Central govt. looks

(2)

stable and looks like taking  
India into modernisation. The  
buddite hatred of computers, severe  
controls on it; treating telephones  
as a luxury (in spite of the  
fact IN~~ST~~AT-1B started to  
give ~~telephone~~ <sup>voice</sup> channels very speedily -  
~~giving~~ doubling the number of channels  
achieved in 15 years in just  
1/2 years of its operation), the  
e-mails ~~were~~ struggling with  
low bit rate error rates  
by NIC. etc, seems to  
be shaken up. The new  
breed PM ~~&~~ Rajiv Gandhi  
~~seem to~~ appeared to  
lead India in a modern  
direction of a  
h

(4)

economy. Though there were scandals of Bofors etc were rocking the ~~new~~ media space, it appears that ~~Rajiv~~ R G, as PM was in command. For me also the personal rapport built with him since 1985 from ISRO days was good. I was somewhere ~~to~~ in his radar. V. Krishnamoorthy

(VK of SAIL, Madras etc) was ~~powerful~~; he was Chair TIFAC;

Vasant Gowanker (V G) had developed excellent rapport with R G (PM), and a few others,

~~at~~ and also <sup>Cap. Sec (TNS) & also top industrialists like Lakshmi Narayan</sup> Principal Secy (B G Deshpande) but

(5)

but he was under constant attack from the "gang" of senior-eminent scientists who had acted as "extra constitutional authorities" with "Science Secretaries" as Secy DST ~~etc~~ Secretary Env. etc were called. VRG successfully managed to ward them off ~~the~~ from the projects he was pushing through (which had social, economic relevance and were ~~meant~~ meant to be on large scale — from idea, ~~to~~ labs to actual market place, as he had executed in ~~of~~ ISRO.

(A good brief summary of his efforts in DST & beyond is available in a recent

(6)

book "The Many Facets of  
Dr. Vasant R. Gowariker"

Ed by A. P. Deshpande

published by National Centre  
for Science Communication

Mumbai January 2016

~~Office~~ (e-mail: office @

mavipamumbai.org),

~~at~~ the Article 13, Vasant

Gowariker - The man who took  
'Science' to Indian people by

\* Y. S. Rajam (me) pp. 57-63

They cover many parts of  
1990 + ...

Early ~~to~~ End of 1989

(7)

brought the downfall of ~~by~~ Rajiv Gandhi; from a state of more than  $\frac{2}{3}$ <sup>rd</sup> of MP's in Parliament, Congress got the numbers in a way that it could not even ~~to~~ cobble a coalition.

~~His~~ His chief opponent (enemy?) V. P. Singh managed to knock him down and also put up ~~exactly~~ a coalition with external support from BJP (that was the anti-Congress wave). He became the ~~the~~ PM of India.

(8)

He was not anti 'science'.  
He was pro-science even earlier  
as he had supported the Decease  
Page of (1990-2000) which is presented  
to Rajiv (select) Cabinet members.  
(URR & YSR present). That works

occur in ~~1988~~ Chapter - 5

But as usual with Indian  
politicians they used in the  
Nehruvian sense of the term  
'science'. But the "Scientist-politicians-

leaders" of the country — a  
small coterie — ~~can~~ conveniently

ignores that and talks about  
basic research, new science etc

(9)  
though it had not delivered  
any thing concrete despite  
a NCST document and

The Approach to S&T Planning  
(1971) (by C. Subramaniam) •

So VP Singh (VPS)  
naturally tries to get PiySD  
as his Cabinet Minister; he  
had told 'no'! Then he  
~~to~~ inducted Raja Ramanna (RR)  
as MOS (Defence) and M.G.K. Menon  
as MOS (S&T); both retired  
by then. MGK being an  
old hand in Delhi - pervading  
all the "intellectual space" and  
"socialite" space.

(10)

Almost right after his taking over, he was on ~~the~~ his major mission of making <sup>Dr.</sup> Manju Sharma the Science - czar of the country after him.

One major task was to revive National Council of Science & Technology (NCST).

MAK in a hurry for action had sent ~~a~~ a cabinet note with many copies to Cabinet Secretariat - the <sup>Cabinet note</sup> copies signed by him as MOS (S&T). He did not even consult Secy DST (VRA)! Also

(11)

Also in such a hurry, without even Hindi language copies. He (MGK) had been Secy to GOI for ~~over~~ since 1970! Manju Shama (MS) was also very much familiar with the procedures.

But 'Power' apparently <sup>discipline</sup> makes one forget every ~~thing~~ ~~the~~ least! "I am the boss!" ~~the~~ was the spirit. But the bureaucracy is great! The ~~the~~ whole bundle which was procedurally wrong, was sent to Secy DST with a cryptic note from a Dy Secy in the Cab. Sectt for "Papers received from the office of MOS (S&T) is enclosed for information!!!"

(12)

MGR who was tracking the progress of the paper found it had come to VRA and was after him to take action, even before VRA physically received them! So VRA called "Rajan! ~~See~~ See the Minister in action! ~~When~~ Go get the paper and see Menon and tell him!"

"Sir, shall I show you? Wants it not ~~to~~ need sending of other ~~few~~ departments, a few at least for comments!"

"Rajan, you know Menon! I don't want to even see it"

(13)

You deal with him!"

I was not just  
Executive Director TIFAC  
then; I was Adviser, DST,  
in the scale of Addl. Secretary.  
What a change from the  
working of K. R. Narayanan  
who was MOS (SET) in the  
~~RG~~ RG's cabinet. How  
many new initiatives VRA  
took when he was MOS (SET)!  
& He (KRN) did not  
interfere in any day to day  
matters & VRA also had  
regular briefings for KRN  
even & when not ~~the~~ necessary  
as per working procedure.

(14)

All these ~~are~~ have been covered in Chapter 5 (1980-89)

IPR, Rajiv - Reagan initiative & US armamentisting, Garbage

processing Project, Quick make

Latrines for Slums (Good

Moring Bombay), NAM Centre ...

So many JNEAF NCMRF Ramp up it etc.

MAK ~~was~~ had no interest in any of them, as he was not in the power loop of RA. He got stuck in

Planning Commission <sup>(PC)</sup> & created troubles from there! But they ~~are~~ have limited reach.

Same was with SAC-PM & CNR Rao.

(15)

MAK was now in a  
hurry to rush for NCST  
which would make him &  
Manga Sharma the Science  
Chiefs to decide on anything  
in S&T. The note was  
written accordingly.

Top tier: PM as Chairman  
MOS (S&T) & Vice-Chairman<sup>(2)</sup>

"A few other old  
"cronies" from MAK Gang!  
(None from CNR Gang!)

~~The~~ Secretary to NCST  
to be nominated by  
Chairman NCST (i.e. PM)

(This had been carefully  
crafted to ensure that Secretary<sup>EST</sup>  
who would normally draft

(16)

~~to~~ taken in as member -  
Secretary as PM Chairman & and  
MGR thought he could have Manjusha  
(mangamath)

~~Let~~ Middle Tier.  
~~Tier~~

An Ex Committee with  
Executive Power

Chairman: MOS (S&T)

A few others.

Member - Secretary.

(The above named  
Secy of NCST.)

Third Tier.

Office of NCST headed  
by the Secy of NCST.

I read the Cab. Note.

It had many unworkable  
things. How can it get

(17)

get things done by other agencies? What focus? As

it was with various other Scientific Advisory Committee to Cabinet (SACC) which

were verbose in agenda

& minutes (I had given

notes to SD who attended

a few of them), the

aim of the ~~the~~ new NCST

was to nullify the SAC-PM

which replaces the earlier SACC

and also to bring in

M&K-team back again

~~as Science Co~~ and making

M&K & MS the Science Czar

& ~~Co~~ ~~Chairman~~ respectively.

(18)

Note that was the first time a Scientist had been made a Minister! Even Indira Gandhi <sup>(TQ)</sup> did not do it. She made them Secretaries to GOI, as she did with a few other technocrats, but not Ministers. That was VP Singh's idea.

SD was politically astute. ~~He~~ Though he did not speak about microlevel ~~happening~~ political happenings in the country, he was very much aware of the transient and uncertain (even unsavory) happening in the political

(19)

System that was governing. He did the minimum interface with them in order to get ISRO going. ~~He~~ The MAK was different. Since he was in Delhi 1970, he was a master of Delhi para-politics (beyond the micro-level para politics Indian scientific gangs aspiring for para!) He had acquired in I A regime an undisputed position as the King Maker for aspiring scientist-leaders ~~to~~ ~~who else~~ Those who desired to be Directors of National Laboratories; those who wanted

(20)

to become Secretary to GOI  
in one of the Science Depts  
etc (which were prohibited  
by him from DST to  
DBT & DSIR; DNES, etc)  
D of Env etc — called  
SET departments). Naturally

all aspirants were in his  
~~ob~~ orbit, making obscure

obscure to him regularly.  
What he wanted, was got done!

This was because he did  
IG ~~spec~~ many special  
favours by being in Committees  
formed by GOI to do  
the bidding of the favours — that he

(21)

If regular IAS bureaucracy  
was proving difficult (though  
they were one of the most  
flexible persons, <sup>many among them</sup> ~~they~~ &  
themselves describing privately  
as ~~has~~ having "plastic spines")

PMO could raise it to  
higher orbit of having  
long term ~~S&T~~ ~~S&T~~  
implications to be seen  
through S&T angle! MAK  
did the bidding beautifully.

He could speak well,  
<sup>so</sup> ~~almost~~ fluently that one  
transcript would not  
require editing for syntax.

(22)

MAR also chaired  
committees which took years  
and thus helped to bury  
things. With these multi-  
purpose, multi-facet  
actions he had led  
'science'. ~~IG~~ He was

also in good terms with  
SD & was in Atomic Energy  
Commission & Space Commission.

So IG would be happy  
as was ISRO's & Atomic Energy

achievements would add  
glory to all of S&T which

MAR was handling. If  
Antarctica took place through

(23)

The speedy execution of Dr. S. Z. Qureshi,  
MAK would take some credit  
as he can speak eloquently.

<sup>(political)</sup>  
A person who ~~could~~  
"sense" some hollowness  
in the Indian SET, its  
incapacity to deliver technology  
for Indian needs (except in  
ISRO), it was RA. I had  
seen him giving tough time  
to Atomic Energy, <sup>during my briefings for Parliament questions / consultative Committee</sup> asking

sharp pointed questions to  
them. <sup>(Atomic Energy & Space used to be taken together as they were under PDA)</sup> More in Chapter 5.  
This ~~is~~ <sup>has been covered</sup> a quick continuous recap for what follows.  
So RA was the first

(24)

PM to put a stop to  
MGR empire; but unfortunately  
he gave the reins to  
another para-monger (with  
hallowness in the realm of  
S&T policies) = See more  
in ~~to~~ Chapter-~~5~~ ~~SA~~ about  
SAE to PM formation, the  
role of my friend V. Siddhartha,  
who himself ~~to~~ was a  
good S&T policy person,  
but ~~did not~~ was not  
adept at the intrigues  
of the Indian scientific community.

(25)

It is in this context MAK's actions have to be seen. Almost from 1986 - ~~and~~ 1989 early 1990, he had to lie low. He did not have access to RA, as he had with IA (almost a monopoly access from "SET community"). He was just biding time in the Planning Commission exercising the residual power of "approving" projects (or giving trouble to projects from those he did not like ~~the~~ VRA!) Scientific Community (i.e. the second-level - ~~power~~ - that - be in science administration) knew that they could not write off MAK though the ~~ever~~ emerging new ~~start~~ "czar" was CNR Rao

(26)

as Chairman SAC-PM; though  
RC lost much of his interest  
in SAC-PM (at least as I  
saw it when I went to Delhi  
in July 1988 - onwards). Though  
Saw Piroda <sup>(SP)</sup> was a member of  
SAC-PM & also TIFAC Council,  
he had his own agenda of  
C-DOT and the Technology Missions.  
He was also <sup>very much</sup> visible as  
Technology Czar. In reality  
CNRE had to had to hang  
on to SP! I had been  
a witness close to the gallery!  
SP was my good friend too!

(27)

So when MAK got his  
power through VPS (VPS)  
he first started working on  
an instrument called NCST  
described above. He however  
forgot that ~~they~~ there were  
counter cycling forces — one  
was Raja Ramanna ~~in the~~ as  
MOS (Defence) taking care of  
Defence Production. VPS knew  
RR very well. If MAK had  
taken <sup>[See DST]</sup> RR ~~into~~ confidence  
and not obsessed with eliminating  
him.  $\Sigma$  in the administrative  
system by placing MM as all-in-all

(28)

as Seay NCST (though she was much junior to VRA and many others including me who was in Addl. Seay grade), VRA would have coordinated well with others and get a system in which MGK was dominant (but not an all-powerful - Czar he wanted to be!)

~~So he hurried the~~

~~ME~~ So, I went to MGK, with the papers sent by Cab. Sectt on NCST.

MGK: "Hello Rajan, Vasant couldn't come?"

YSR: "He had some pre-fixor meeting. In order not to

(29)

low time, & he asked me  
rush to you".

(A part lie but that would  
please MAK!)

MAK: "Okay. I want this  
to go ~~to~~ Cabinet in a  
couple of days."

YSR: "Sir that may be  
tough. VRA will not change  
any thing in the note  
though he has to really  
initiate, coordinate with  
other Ministers etc But we  
need to get Hindi copies  
which will take some time  
as the translation has to be

(30)

by the official translators.

Also we need to do some editorial changes as the

note will be signed by Secretary D.S.T.

MAK: "Okay... my name has to appear."

YSR: "Yes Sir; definitely:

but it would definitely

Sir; MOS (S&T) has seen

and approved the note

Submitter to PM for

his approval as Minister for

~~D.S.T.~~ S & T; after that

we will put The note

has been approved by PM

as Minister for S&T

Then VRC will sign "

(31)

§ MAK: " Okay... okay let  
it move fast. Let it

contain clear sentence that  
MOS (SEPT) has approved <sup>"</sup> ~~it~~

Y SR: " Yes Sir definitely ~~it~~

In order to cut time  
we are not even resubmitting  
the file to you, as it is  
as per your note with  
editorial changes I said.

~~Parallely~~ <sup>to</sup> Then will send  
to PMO and parallely  
for ~~the~~ Hindi translation"

MAK " Good ; Good ; please  
chase it up ! "

(32)

I went and briefed VRG.  
He was partly surprised that  
I came & back in one-piece!

"Rajan: what did you do?  
Any special charm?"

"No Sir: he is ~~so~~ in such  
a hurry to have ~~at~~ his  
NCST, he ~~& is~~ is  
ready to have it go without  
showing him, but having  
a clear note that this note  
has been approved by MOS(S&T)

I told him "yes Sir but  
there has to be PM as Minister  
of S & T has also to approve;  
we have to submit to PMO;  
Hindi translation etc. He said  
"Yes do anything... take care

(33)

that MOSE & SET approval  
clearly mentioned: "Yes Sir"

So that is it! & We  
have to do this useless  
work." Then

I followed it up with  
~~DR~~ N. K. Sinha Joint Secretary  
of DST (who came from  
the I Telephone Service Cadre!)  
B. E. and a good man!

He read it, and said  
"Paagal hai ... kya  
kya likhe hain!" We  
used to have frank discussions.

~~Sinha saar~~ I said "Sinha  
Saab & chod deejieh..."  
Hum pahuncha denge  
PMO-par, ~~now~~ end modification

(34)

‡ काँकेय. Hindi mein bhi  
‡ kar lengey! Opan accept  
kiya tho hamein kya!"

Both of us had an  
instinct that it would fall  
through some where!

So we moved. PM  
approved for placing it  
Cabinet. MAK would have  
pestered him!

With Hindi translation  
etc, all duly signed  
by Secy DST, the note  
for NCST was moved to

(35)

Cabinet.

We got a note from Cab. Secy that Cabinet had approved the note but only for the first time — without any change in the composition suggested by MAK.

~~We were told~~

We learnt that when this agenda came VPS turned to Raja Ramanna and asked him whether he had any suggestions on the membership <sup>of NCST</sup> proposed in the note.

(36)

Raja Ramanana in his usual manner "I am just seeing this note on the table now. A quick glance shows that it could have been much better composed!"

That was enough for VPS.

~~He did~~ Being a shrewd politician VPS did not want to ~~do~~ waste further time.

If he sent back, MGK ~~would~~ would be after him, and VPS had many more important ~~at~~ agenda (political) before him.

So he ~~offer~~ suggested

(37)

approval of the note for  
only ~~one~~ first Tier-1.

Seeing that decision  
MGK almost lost interest  
in NCST. He did not ~~pass~~  
peter VRA to issue orders  
etc. ~~Q~~ NKS advised Secy DST  
"let us complete our part  
as the note did not name  
the Secy of NCST. It is  
to be named by PM". So  
we made a ~~new~~ note from  
Secy DST to PMO; this  
did not have to go through  
MOS(S&T)!

Note came ~~own~~ back

(38)

with PM, as Chair NCST,  
naming Secy DST as  
the Secy of the NCST.

The orders were issued.

MAK would have been  
furious but could ~~to~~ not  
do any thing. So he  
started poking into other  
operational working of DST &  
other departments.

He wanted all the  
departments not to ~~do~~ take  
any personnel related ~~work~~ <sup>actions</sup>  
— new recruitment etc & promotions,  
transfers etc — without the  
specific approval of MOS(S&T)

(39)

VRG went and explained  
to MAK that even he does  
not see ~~the~~ various provisions  
transfers etc at various  
levels (MAK wanted all levels)  
of SOI, <sup>IMD</sup> etc which have  
huge 20k+ organisations)

He did not budge. But  
he also worked an alliance  
with Secy DAE <sup>(PKIyengar)</sup> / Secy DOS (URR)  
etc, telling them these orders  
did not apply to them  
but only for DST, DBT, DSIREk  
Actually he had no role  
with them except for assuaging  
PM on Parliament Questions. That was

(40)

What Shivraj Patel, K.R. Naraya  
en did. ~~for~~ I had some  
goape wne input that ~~to~~ MAK  
had asked URR, PKI en to  
do a coalition with ~~at~~ him  
to usurp VRG. ~~URR to~~  
He wanted to use URR's  
earlier ~~skit~~ animosity  
towards VRG. YP was away  
from there as he was  
with ~~upse~~ Chauman ~~UPC~~<sup>UGC</sup>  
with his plates full.

In addition MAK  
wanted a room allotted  
in DST where he would

(41)

Come ~~trac~~ weekly once to have direct interaction with officers / staff of DST (over the head of Secy DST). He could ask them to come with files — unheard of.

Since there were

some bad publicity for MAK especially in <sup>reputes papers</sup> ~~Monday~~ by a

good article by R. Ramachandran, and a report in Business Standard

MAK issued an order that

nobody from DST etc would meet press without MAK's

approval. \* Not even Secy DST!

See one

from Business Standard

8 Jan 1980  
Reproduce here

⊗  
41(a)

(42)

He issued orders on which  
files should be routed through  
MOS(S&T) <sup>to PM</sup> ~~at~~ - almost

all from DST / . . . Many like  
this. . . Daily work was all absorbed  
by him.  
VRA finally decided to  
bring it to a head.

He had a good  
rapport with the Cabinet  
Secretary (Vinod Pande) & he  
~~also~~ knew me also  
well as ~~we~~ we had worked  
together on many items  
when V Pande was Secy Rural  
Dev. As per V Pande's advice  
~~a~~ a total list of

(43)

how DST was operating (for individual items) before the advent of MAK and what orders he had now given.

I got it prepared for VRA and we looked at each itemised thing carefully, for full correctness etc.

As per Vind Pardé's advice, this table was submitted to CS by VRA as Secy DST, just "As discussed. The enclosed table is attached"

(44)

The note came back within a couple of days with PM's own writing, "The arrangements which existed before shall continue".

That ~~is~~ came directly to Secretary DST. Many in the SET Community would not appreciate the long term significance of this; then and even later. Had VRG not obtained it, the entire DST would have been finished. It would not enjoy ~~even~~ the autonomy even the "worst" of the socio-economic depts enjoy. Fortunately even up to now these have not

(P.T.O)

(45)

been disturbed, though a number of Secretaries, <sup>DST</sup> who came later did not take bold initiatives like VRG. But due to constant ~~to~~ bickerings from the "SET side" <sup>community</sup> that "Scene" was not getting enough <sup>full time</sup> attention, a full Cabinet level Minister was appointed for DST, DBTEK when Dr. Murli Manohar Joshi became Cab. Minister. ~~At~~

The advantage of DST reporting directly to the PM was lost (retained only DAE & DOS!)

Still MAK did not keep quiet; he had earlier

(46)

itself had made VRA to route the file for 2. renewal of the SAC-PM through him. (SAC-PM was formed by RG in Feb 1986 → renewed once in Feb 1988 → due for Feb 1990). MGK sat on it so that SAC-PM with CNR Rao died in natural death! (Even before that CNR had done his song & dance with TIFAC, DST etc.). He was also partially busy with working on JNCAR <sup>from RG</sup> which TNS got approved for Jawaharal Nehru's 100<sup>th</sup> birth year)

(47)

He trained his guns  
at TIFAC, so that the perceived  
No 2 "General" of VRA can be  
knocked out! It would also  
help MAK put MS in my  
post which was Addl. Secy level.

One day he called me directly,  
"Rajan, I want to take a  
full review of TIFAC <sup>Council</sup> any time  
soon; keep ready"

~~As a~~ Being well trained  
in ~~As~~ Amb Admon, in dealing  
with such Ministers, I immediately  
dictated a note to Chairman TIFAC  
& ~~the~~ With his signature & Secy DST  
signature it went to MOS (SPT)

(48)

for obtaining his date. ~~It~~  
The note mentioned about having  
all the Council members as  
MOS (S#T) had said. Joseph,  
PS to MOS (S#T) returned the  
note with the date given by  
MOS (S#T) o

We worked hard to  
prepare slides, papers etc and  
I called individual TIFAC Council  
members to attend though  
it was a short notice. They  
had great regards for me; and  
respects for VK & VRA. I  
~~had a~~ continued my regular

(49)

discussions with VK since 1988 and therefore could have a frank discussion with VK on MAK's intent.

VK: "Rajan, don't worry. You prepare every thing, I will handle him!"

Sam Pitroda was also aware of these. He said he would come. V.S. Arunachalam ~~was~~ told me, "Rajan I won't come; don't worry!"

So we had a

Just about an hour before the meeting, MOS (SAT)

(50)

who would have seen the  
list of attendees, would  
have ~~to~~ got "jittay" and  
therefor called me,

~~#~~ Joseph said "Sir  
Minister wants to speak to you"

MAK: "Rajan, who asked  
you to call all the members  
of the TIFAC Council? I  
just wanted ~~at~~ Vasant, Krishnamoorthy  
& you alone!"

(He obviously wanted to  
use the privacy to fix  
me & TIFAC and call it  
a review meeting)

(51)

I replied: "Sir, I have called as per your ~~instructions~~<sup>instructions</sup> and I had sent a note on that which ~~to~~ you had approved & given dates. They have all come. About to start from their places. If you want to stop them, I will do. It will look very odd!"

MAK: "Send me the note by fax. I will tell you to stop or not. But if they come, I reserve <sup>and then</sup> my right to call for ~~it~~

(52)

meeting!"

I faxes the copy. There was no call back. So all of us went

It was good <sup>review</sup> meeting in a sense I showed a few ~~new~~ specially prepared ~~the~~ slides! ~~The~~ Since TIFAC

Commit members were fully involved, each taking a special care of a few areas including

Prof. M M Sharma <sup>GOVET</sup> (who was in MAK and more in CNR pwa groups), members started talking.

MAK kept quiet, as there was so much progress and

(53)

being an intelligence person  
did not want to get rebutted  
by them! VS Arumachala (VSA) praised  
TIFAC work.

After about 1 1/2 hours  
the meeting ended timidly, with  
no summary comments by MAK!  
I had some respite from  
his side.

Amidst all these  
TIFAC work was going on  
~~the~~ very well. I was aware  
that MAK groups & CNR groups  
were ~~spread~~ spreading ~~the~~ false  
ideas on TIFAC that it was  
not doing ~~any~~ forecasting  
studies at all! It was doing  
market surveys, etc. ~~I~~ I had

(54)

full support of members of  
the Advisory Council and a huge  
Coalition of Socio-Economic  
Ministries (many ~~from~~ at  
Secy, Addl. Secy & Joint Secy  
level who found our work  
to be very useful for them to  
modernise, as I would elaborate  
later in this chapter) and  
also from industry leaders  
and members of CII, FICCI,  
ASSOCHAM etc - big, small  
& medium industries.

Since MGR was  
a friend of SD, he may

(55)

"foul mouth" about my  
progress to SD and use ~~the~~  
SD's not-so-great-opinion  
about VRG, against VRG's  
stewardship. SD did not know  
VK well!

So I did a preemptive  
note to SD. I was to keep  
him informed quarterly and  
also meet him when I went  
to B'va. He was to give  
a long duration, which continued  
till his demise. Knowing  
his style, I would not make  
it hit-and-run; long  
"discursive" & focused discussions  
(to use his terminology)

(56)

So I ~~was~~ wrote a long letter,  
a typed one dated Mar 13, 1990  
(totally 17 pages)  
to SD<sub>L</sub>. Unlike other letters, it  
was long and covered only TIFAC.  
Getting prepared for MAK onslaught  
also had made to do a complete  
stock.

The letter starts

" My dear Prof. Dhawan

This letter is all  
about TIFAC. Though I have  
talked to you a few times  
on many of the activities, here  
I attempt to have all of  
it together.

2. Many of the activities of by

(57)

TIFAC have started yielding  
some good results - - - -

- - - -

4. While I am sending this  
letter mainly to keep you  
informed of TIFAC's activities,  
it will also serve me to  
take "stock" of TIFAC activities  
since I joined it (July 1988)."

- - - -

The letter goes on explaining  
briefly each activity and  
relevant  
enclosing a document brought  
out by TIFAC - - - -

(58)

Towards the end in the 16<sup>th</sup> page, I hint at some ~~questions~~ issues the detractors would raise

"What is the implementation?

What is the policy change?"

These are done by persons who

were at helm of "affairs" of

S&T for ~~more~~ <sup>about</sup> than three

decades with <sup>a</sup> precise mandate

to give policies! They did

nothing and when we moved

they would critique. Within

DST, there was one P. J. Lavakare

CMAK's crony staff right

from TIFR days and was

(59)

The senior most in DST  
Adviser DST like me, controlling  
the great grant disbursing  
body called SERC (Scientific  
& Engineering Research Council)  
with really little results or  
with any policy direction!

He was the SAC-PM Secretary  
(with the help of CNR)  
after usurping V. Siddhartha  
the creator of SAC-PM in 1986.  
PJC by virtue of that <sup>(SAC-PM Secretary) would,</sup> behave  
as if he was higher than  
~~Vasant~~ VRG; he would call  
VRG as Vasant in open meetings!

(60)

He used to ~~criticize~~ Criticize  
TIFAC within DST meetings,  
I also would hit back.

"Lal Kare, if your idea  
of TIFAC was that I should  
be writing research papers  
on TF, then I should have  
been ~~was~~ a Professor in  
an institution or University &  
do it. Here ~~we~~ we are  
for end-to-end actions to  
help industries & technology &  
orient science researchers; also  
govt: It is to deal with  
complex real life of Indian

(61)

Economy, industry and technology development!"

During the short period  
~~of about~~ from July 1988 to early 1990,  
I had read some of the  
best S&T Policy, Technology  
policy researcher books like  
Keith Pavitt, Branscombe &  
many more. I had read  
many books on Economics,  
global trade etc. I knew  
the business very well - at  
least better than most of  
them in S&T community  
and <sup>academic</sup> govt economists.

(62)  
Pg

Persons like Deepak Nayyar  
Ch of JNU had a great  
regard for me (he was  
a member of TIFAC Council.)

So I ~~trust~~ say  
the penultimate para, based  
on the studies of TIFAC etc  
" Since in many industries,  
we are still obsolete in  
technologies and working methods,  
it may be premature to make  
them work on "beyond the  
horizon" technologies. (As you  
used to say "Engineering is  
a step-by-step ~~pace~~ process,


(63)

I find that unless they realise some of the existing "technological know-how backwardness" and solve them, to introduce brand new technology may not be possible ....). We hope to experiment many methods ... let us see the results and learn. .... "

The letter ends " I plan to meet you after two or three ~~two~~ weeks to get the benefit of your advice. About 42 documents were the enclosures. Since this is a vital document

(64)

Summarising the work of TIFAC  
at that time, (as it happened  
then, instead of drawing from  
my memory or reconstructing with  
the 42 documents now), I  
am ~~at~~ ~~cont~~ placing them  
as a part of this write up  
giving continuous pagination

  
The Continues with  
the pagination letter.

Y.S. RAJAN

(65)

No. TIFAC/2/90

March 13, 1990

My dear Prof. Dhawan,

This letter is all about TIFAC. Though I have talked to you a few times on many of the activities, here I attempt to have all of it together.

2. Many of the activities initiated by TIFAC have started yielding some good results. I am enclosing herewith a number of reports and documents - some of which are in draft form. They will give you some idea of what is happening.

3. I will make a brief comment about each of the document in the following paragraphs of this letter. I will also describe briefly how the studies were done, the constraints, etc. I request you to peruse them and give your (valuable) critical comments on each of them. I have not arranged the documents in a pure chronological order. I have tried to maintain a subject continuity.

4. While I am sending this letter mainly to keep you informed of TIFAC activities, it will also serve me to take "stock" of TIFAC activities since I joined it (July 1988).

5. The very first document brought out by TIFAC is Document # 1 describing about TIFAC. You will find a brief description of the objectives of TIFAC (the "language" of objectives, etc., is "lifted" from the Government documents approving TIFAC.) Interpreting them in a broader context, the Council narrowed down a few areas in which TIFAC should concentrate. Even this list is very large. It was arrived at after informal discussions with a large

(66)

number of persons and also the then SAC to PM. The list contains certain areas where large value/volume technologies are involved; some having a greater social relevance; and so on.

6. It was concluded in the Council meeting that atleast initially TIFAC cannot be giving a Technology Status report - covering all technologies available or relevant for the country. That is why it would be noticed that first Annual Report of TIFAC - Document # 2 - addresses only activities of TIFAC.

7. It will be noticed from Documents #1 & # 2 that the Council gave a lot of importance to the creation of a Data Base/Information System on Technologies. The documents addressing the Information Systems are:-

Document # 3	TIFACLINE (Doc.No.0.011/TIFAC/30)
Document # 4	Flip Chart
Document # 5	Guidelines for recording information in TIFACLINE information Database (Doc.No.0.007/TIFAC/89)
Document # 6	TIFACLINE - Networked Technology Information.

8. I am not enclosing a large number of working level documentation on TIFACLINE used for Expert Reviews (we were fortunate that persons like Dr. K.S.Prabhu, Dr. N. Ramani, Dr. T.Viswanathan also reviewed various aspects of TIFACLINE).

9. We had planned a Technical demonstration around mid-1990. It may get delayed for a variety of reasons. I am particularly concerned with the quality of Data Entry (how updated and technically sound each entry is) and the Expertsline (the real

(67)

quality of experts) - software problems while difficult & complex can be resolved, I have requested some persons to oversee the Data Entry.

10. One major problem is the degree of interest and motivation of technical teams in the laboratories. They are the right people to do the work ( SAIL (R&D), TERI, BARC, NAL, DMRL, etc.) They have the necessary peer groups too. At the top level of the laboratories they have given good commitment to the Project. But the actual infrastructure and organisational support given by the laboratories to the one or two information Scientists (who directly work on this project) are poor. For example to fill in and review the contents of Document # 5, a large number of technical persons from the laboratories would need to be involved. Despite many requests, in actuality the involvement of other technical persons from the laboratories is not adequate. "What do I get out of it?" seems to be unasked question in their minds - the classic conflict of interest between the Project and divisions, in a situation where we cannot have even a direct control. But we are not giving up the efforts - we are trying a variety of methods to enthuse the laboratory personnel to do the work on the project - including the provision of a PC which is the Data producer terminal. Some wait for work till the PC arrives, even though the Doc. # 5 can be filled up without any of it. I will send more information on TIFACLINE as we have a better progress.

11. One interesting item which was initiated on TIFACLINE is a professional market survey by a competent Consultant Group. Since it is difficult to "market" a knowledge-based product like Technology Information, we had waited for such a survey till some

(68)

work on the pilot experiment progressed, so that something to show will be available. The survey is near-completion. I am enclosing herewith a draft interim report; even in this form it will give you some idea about the final findings of the survey (Document # 7) We will go through various reviews of this survey as well as the status of TIFACLINe to effect appropriate mid-course corrections. I would be grateful if you can give your considered views - atleast as points - on the TIFACLINe as a whole as well as other details about TIFACLINe.. It will help us in shaping it properly.

12. Now I will turn to Technology Forecasting & Technology Assessment activities. It would have been ideal to give each area to an Expert Group - with a highly capable technical leader guiding them. Each member of the team should devote atleast 50% of their time to the Technology Forecasting & Assessment activities besides their other technical/professional activities. The team members should have an access to information on the international status of technologies, status in India (including industry), commercial/economic data, etc. The foremost problem is to get a team of 4 or 5 professionals who are together. Not many seem to be willing to devote time to collect and assimilate large amount data on the subjects. Most of them are ready to give general suggestions on the direction to go - mostly on an impressionistic basis. Matching their suggestions with the ground realities of Indian industry is a big problem. Part of the reason why many technical professionals behave like this is because they seem to have lost the faith in the ability of the system (over the past few decades) to take technology planning seriously. "We have told so many things .... so many times ....still massive imports of turn key projects are taking place, that too of obsolete/incorrect

(69)

technologies - what is the use of another study ?" This is the reaction from most of the persons.

13. Another problem is that most of the experts are busy elsewhere and there is no mechanism for TIFAC to bring them for periods of one or two years with sufficient incentives (monetary and otherwise) to work for TIFAC. (After about 1,1/2 year of chase-up we just now have Prof. R.S.Ganapathy, from IIM (with TIFAC) on a SAIL project and another competent middle-level engineer from SAIL, Ranchi - again paid by SAIL - on loan to TIFAC.

14. But we have not yet found a system to do regular TF/TA studies - on a continuing updated basis. A number of experiments have been done which provide some clues as to what can be attempted in the future. I am also aware that it takes years to stabilise a group like that of Prof. Amulya Reddy. But we have compulsions to do things fast.

15. We have explored fully the strengths of existing Ministries/Departments. The Scientific & Technical Advisory Committees (STACs) in the socio-economic Ministries have started their activities over the past two or three years. Except for a few of them which have been functioning very well earlier, most of these STACs function as mere Committees which meet once-in-a-year-or-so, or act as a body to decide on a few R&D Projects. None of them, even the best amongst the STACs, have come up to the role of Advance Technology Planning ( which is what TF/TA are about.) However, some of the STACs have produced a few good documents about R&D going on in their Ministries. DST has the responsibility to coordinte amongst STACs through a mechanism called Inter Sectoral - STAC called IS-

(70)

STAC. A Scientist from DST is responsible for it and we from TIFAC work closely with them. In a number of STACs besides a DST representative, there is also a TIFAC representative. We have decided not to have a separate sectoral TIFA's in various Ministries (see Doc.# 1) and are using the existing STACs as a Sectoral TIFA. We are requesting the Ministries/Departments to provide funds under their control in their Departments/Ministries to support TF/TA/TIFACLINE work. About 10 of them have done so.

16. The two documents (brought out by DST) on STACs will give some idea about STACS.

DOCUMENT # 8 : Compendium of STAC's Activities in  
Socio-Economic Ministriés (Vol.I)

DOCUMENT # 9 : - do - (Vol.II)

17. TIFAC took the initiative of approaching all Ministries/Public Sector agencies to give us documents about their Technology Plans (even those reports which have not been acted upon). Fortunately after a constant chase of a year we got response from about 80% of the organisations (about 150 documents). Since most of these documents are bulky and not always well written, TIFAC has brought out a summary of all these reports under 14 broad headings:

- (1) Agriculture
- (2) Chemicals and Petrochemicals.
- (3) Education
- (4) Electronics.
- (5) Energy
- (6) Housing
- (7) Instrumentation
- (8) Metal
- (9) Non-metal.
- (10) Technology upgradation/transfer

(71)

- (11) Telecommunications
- (12) Textile
- (13) Transportation
- (14) Waste Treatment

All of them are in the press. The documents which have already come out are enclosed:

Document # 10	Agriculture (TIFAC.SP.001)
Document # 11	Chemicals&Petrochemicals (TIFAC.SP.002)
Document # 12	Education(TIFAC.SP.003)
Document # 13	Electronics (TIFAC.SP.004)
Document # 14	Energy (TIFAC.SP.005)
Document # 15	Housing (TIFAC.SP.006)
Document # 16	Instrumentation (TIFAC.SP.007)

(As others come out of the press I will send them to you.)

Those interested in seeing the original documents have to contact TIFAC.

18. These documents are being circulated widely to various technical groups. When technology forecasting and assessment exercises are done, these documents can be useful inputs to know some "ground realities".

19. In the field of Forecasting we utilised the study done by IPCL - IIM (the study was underway when TIFAC started). TIFAC Council considered the outcome of the study (presented by Dr. S.Ganguly, the then Chairman of IPCL). While endorsing the findings of the study, the Council decided that we have to come up with some specifics which can be recommended to the Government, Industry and R&D Labs for action. This principle introduced by the Council was important: "Don't stop at Forecasting & Assessment. See the ground realities and suggest some items for specific action in the Indian context."

Document # 17 Technology Planning for Petrochemicals - is the IPCL-IIM

(72)

Study.

Document # 18 A Report on Technological developments related to Petrochemical Industry in the area of Naptha/ Gas Cracker, Polyolefins, Aromatics (Ref.No.TIFAC:P:003)- is the specific recommendations of TIFAC.

We hope to ensure that these recommendations are followed. It can be done only by persuasion. Chairman TIFAC is writing to Ministries, talking to them, etc., also with Industry. Let us see what happens.

20. Another study initiated by TIFAC relates to the Human Settlement related Technologies. Summaries of the seven reports along with a copy each of the seven reports are enclosed.

<u>Summaries of the reports</u>	<u>Report</u>
1. Document # 19 (TIFAC No.HS/1/90)	1. Doc. # 26 (Guided Urban Development)
2. Document # 20 (TIFAC No.HS/2/90)	2. Doc. # 27 (Technology Aspects of Low Rise High Density Developments for Different Types of Human Settlements.)
3. Document # 21 (TIFAC No.HS/3/90)	3. Doc. # 28 (Low Cost Infrastructure for different types of Human Settlements- Roads)
4. Document # 22 (TIFAC No.HS/4/90)	4. Doc. # 29 (Low Cost Infrastructure Water Supply, Sewerage and Drainage)
5. Document # 23 (TIFAC No.HS/5/90)	5. Doc. # 30 (A Model Framework for Technological options in shelter construction)
6. Document # 24 (TIFAC No.HS/6/90)	6. Doc. # 31 (Technical Aspects for facilitating adoption of new techno-

(73)

logies and innovations  
in the Human Settlement  
Sector)

7. Document # 25  
(TIFAC NO.HS/7/90)

7. Doc. # 32 (Administra-  
tive aspects for facili-  
tating adoption of new  
technologies and innova-  
tions).

The rural scene is not addressed. It is more relevant to the organised sector. While there are several useful clues/suggestions, they are not the best yet. The Council has to consider them to go forward further. The Report on "Building Materials & Skills" is yet to be received.

A study on Sugar Industry is also to be finalised in about a month.

21. Regarding Steel we have initiated 14 studies to define (Forecast-cum-Assessment-cum-Action Plan) what the country should do beyond 1995 after SAIL, TISCO modernisation is complete. The fourteen studies are:

- a. Iron ore upgradation to reduce alumina and utilisation of fines in sinter.
- b. Economic reduction of ash in coal while conserving the scarce coking coal material
- c. Coke rate reduction in blast furnace.
- d. Continuous / Direct Steel Making
- e. Alternate routes of iron making
- f. Energy recovery systems including hot-gas clean up.
- g. Simulator cum pilot plant for continuous casting.
- h. Design and operation of drives for conservation of Electrical Energy

(74)

- i. Development of refractories and insulating materials to reduce thermal losses.
- j. Development of ladle metallurgy to produce clean steels with consistent chemistry.
- k. Dephosphorisation of steel.
- l. Thermo-magnetic treatment of steel to produce the desired properties.
- m. Direct strip casting for amorphous iron-silicon transformer core-material.
- n. Integrated control system for conservation of energy, increase productivity and improve source utilisation.

It will take about three months more to complete the reports.

22. Regarding TITANIUM, which the Council has also identified as an important item in the Indian material technology scene (based on presentation), nothing specially new was to be done since over the past five years DMRL, Deptt of Mines, DAE etc. have been studying the matter. What was needed was to put together various inputs in a simple readable form explaining the role of Titanium, Cost-effectiveness, where it can be applied etc. A first cut draft is placed as Doc. # 33 (Titanium - An Overview and Strategy for production in India.)

23. While considering Materials Technologies, it was found that it is not enough to talk of future without looking at some of the actual realities of the Indian scene. Foundries are languishing and most of them have not kept pace with modern developments. So TIFAC studied "Foundry modernisation". We studied the issues alongwith DMRL/CEI/Foundry Industry. What was to be done to modernise is generally known. But there are no

(75)

"numbers" to decide on certain course of action.

A preliminary document is : Modernisation of Foundries -  
(Doc. # 34) Status and a plan for Action.

During April we will have the last round of meeting and finalise our report.

24. A set of joint (TIFAC/DOE) studies on Electronics Materials is yet to take off.

25. Yet another important set of studies based on a DGTD presentation relates to the following :

- i. Various suggestions emerged during the TIFAC meeting. These include introductions of openness in decision making, methods of technology planning in a few areas of Indian industry which have reached International levels of volumes etc. These suggestions and refinements thereon will be documented by TIFAC/DGTD. The document will be submitted to Chairman TIFAC. He will send it to important decision makers in Govt. (Cabinet Secretariat, PMO, Ministry of Industry, major industrial houses etc.) highlighting areas of action.
- ii. The list of industries in chemical, electronics, telecommunication, materials technology etc. where special efforts should be made to reach international standards of productivity and efficiency, may be drawn up. Technology inputs needed for these industries may be arrived at through an intra-industry study and discussions. There could be a series of workshops to have a larger open participation. The action plans should also include where we should develop key centres of excellence in the country to achieve technological eminence. Interim measures to be taken by Govt. ensure that the formation of such integrated programmes are not bypassed, should also be indicated.
- iii. The above action plan should be put together and sent to all concerned for action and important Govt. agencies for providing an enabling

(76)

environment.

- iv. A rough time schedule for (i) above was end October, 1989 and for (ii) and (iii) by end December, 1989.

These can form a good basis for some basic decision. DGTD needed some time to start work. We will try to bring out these reports in about three months. Copy of the DGTD presentation is enclosed as Document # 35.

26. Another matter concerns Utilisation of Coal. Based on a presentation TIFAC has concluded on certain broad aspects. These will be expanded further for specific actions. The presentation material and the TIFAC conclusions can be seen in the Document # 36.

27. Another useful set of studies relates to the experience of other countries in TF/TA/Important System and decision making based on these; also a manual for TF/TA. Five studies were entrusted to Dr Bowonder of ASCI :

- i. Use of Technological forecasting in decision making in selected countries : Lessons for India. (TF/TA/FS (future studies) 4 out of Japan, South Korea, Sweden, France, UK, Poland, West Germany.
- ii. Detailed trend Studies on long term technology development strategies in selected sectors, micro-electronics/ biotechnology / machine tools/ good products, etc.
- iii. Preparation of a Manual on Technology Forecasting techniques and case studies.
- iv. Preparation of a Manual on Technology Assessment techniques and case studies.
- v. Technology Monitoring through Survey of technology

(77)  
forecasts.

Copies of two reports which have come are enclosed :

Doc. # 37: Study No. I - Technological Decision Making

Doc. # 38: Study No. II - Technology Development

It is planned to present the Results of all these five studies to a group of 100 persons. We hope to come out with some consensus on the lessons to be learnt for India and the mechanisms for continuing studies.

28. In addition to the above, we do give information/advice/inputs to Deptt of Industry, BICP, etc.

30. I would have personally liked to see more things to happen. But there seems to be a major limitation "Indian-rate-of-interaction" - which is of the order of 10 to 12 months not weeks! (After all the detailed discussions, things start moving only after 10 to 12 months - too long a start-up phase). May be it is good for stability!

29. We are also explaining the possibility of some young professionals doing the TF/TA studies. We advertised in the newspapers. After screening the reponses we have manouvered down to a few groups for ascertain studies. These cover the following areas :

- Post-harvest Technology
- Sugar Industry
- Instrumentation Technology
- Capital Goods - Automated machinery and Production System - Robotics
- Energy - Bio-mass Production/Utilisation
- Packaging Technology
- Water Treatment Technology
- Material Technologies - Foundry Industries
- Cryogenic Technologies

(78)

- Bio-technology - Monoclonal antibodies  
- Enzymes
- Agriculture - Biofertilisers  
- Food Processing Technologies
- New Materials Technologies
- Transportation

If we can find out some good groups (judged by the outcome of the studies) we can nurture them to become TF/TA study groups. They can also help other Ministries / Departments to look at their areas of interest, thus enabling "TF/TA Groups" to emerge in the socio-economic Ministries.

31. The S&T Deptts do not see any special need to do systematic TF/TA studies. They feel that planning done for their Department's activities would suffice. For the present, we are not pressing them much. You are aware that ISRO's decade profile does not address technology development plan. You had asked ISAC earlier to come up with Technology Choices for Satellite Technologies - "Do we stick to Aluminium Alloys alone? Or go towards composites etc.?" No such plan was brought out by ISAC. Probably if we had done some serious TF/TA work on Ground Systems, we might have got into that business in a more serious way. ...Any way for the present we are not pursuing with the big S&T Departments except for the help by BARC for TIFACLINE's Nuclear Technology Data Base.

32. On SATCOM related technologies we had initiated some work with DOT. But we are presently going slow.

33. Similarly, we had planned a serious study on the Aviation related technologies to be conducted by the TCS Group (Prof Murthy) with the overall guidance of Prof R Narasimha -

(79)

but there was some dislocation due to Prof R Narasimha's movement abroad. We will pick it up. Prof R Narasimha is in touch again on the matter.

34. We had also planned to study some Technologies Assessment Studies with BEL and HMT on Automation - has been slow to pick off.

35. There are some other studies at the definitional stages - more on them later.

36. TIFAC extended special support to a Committee studying "S&T investments during the Eighth Plan by Industries". I am enclosing an interim draft which will give an idea of the matter. Document # 39.

37. TIFAC had an empirical study done through NISTADS about the linkages between various S&T institutions in the country.

Doc. # 40 A study on linkages of Research Institutions with Academic Institutions and Industrial Organisations. (Ref. No. NISTADS-REP-72(TD)/89-Vol. I)

Doc. # 41 -----do----- (Vol. II)

A study as to what happened from NCST to TIFAC is underway. A preliminary draft is enclosed. (Document # 42).

38. To fill the gap in the knowledge about the world status on commercialisation/commercialisability of emerging technology TIFAC has started building up a specialised library. Soon the TF/TA groups have to use these and develop an Indian scenario. I am enclosing a typical list of the documents (Doc. 43).

39. I have taken the liberty of flooding you with all these

documents. I do not want to claim that all of them are of excellent quality. But these would give you a total picture. I will value your advice.

40. You would find an absence of work on the Energy sector except for a study on Coal. It is a complex matter. We would identify a good group which can work under the guidance of Shri T R Satishchandran.

41. A word about the mechanisms to implement the recommendations resulting from TIFAC studies. The earlier SAC to PM had a special Empowered Group chaired by the Cabinet Secretary to implement its recommendations. I am not aware of any major change in Industrial Policy or a technology pertaining to a major industry being implemented partly because "the end-to-end-to-chain" in the recommendations were missing. As far as TIFAC is concerned, it is not in any "approval-giving-loop". Therefore its recommendations can only work as "advice". Since in many industries, we are still obsolete in technologies and working methods, it may be premature to make them work on "beyond the horizon" technologies. (As you used to say "Engineering is a step - by - step process", I find that unless they realise some of the existing "technological know-how backwardness" and solve them, to introduce brand new technology may not be possible.....). We hope to experiment many methods ..let us see the results and learn. We are also deeply aware that the whole MITI took 20 years to come out as a force. But people expect TIFAC to yield results almost instantly. Chairman TIFAC is fully aware of this matter and he would not like to rush just to show something.

42. Based on suggestions from a number of persons, we were

(81)

also planning to do a major TF/TA study with Arthur D Little or Beattle...Till things stabilise here in New Delhi, we do not plan to initiate anything now on these lines, though it would have been a useful exercise in making many of our S&T groups aware of the methodologies used by them.

43. I plan to meet you after two or three weeks to get the benefit of your advice.

With kind regards & respects

*Raj*  
(Y S RAJAN)

Prof S Dhawan,  
7/11, Palace Cross Road,  
Bangalore 560002.  
-----

(Go to 82)

Continuing written part. —

(82)

I don't remember what exactly was the follow up to this letter. But it was a relief for me, as SD had been fully briefed and ~~the det~~ the gossips of the detractors delivered to him ~~as~~ as tit-bits would not have any effect, as he had a total picture. Though he did not have any gov't position, nor was he interested in getting with the political / policy circles to help me or ~~it~~ in any other way, I valued his opinion about me. He was like a pole-star for me. By talking to him, from

22/8/90 - 1 - 83(a) Personal

My dear Prof. Dhawan:

Whether you like it or not I will continue to share my joy or sorrow with you. (I sincerely thank God that I have such an opportunity — an extremely rare one in this dreary land of ours).

I enclose herewith a <sup>copy of a</sup> letter or note from Prof. Menon. I will take action as a routine <sup>duty</sup>. This note comes despite a recent review along with the Council & so on. No need to bother you with hundreds of details ... you can see the "ultimateness of the clericalisation of science in this country". Many tall talks of vision, freedom, flexibility ... I know why this was written: due to a voracious appetite to 'control' which for such men can be done only by petty administrative — of budget, personnel, etc.

The discipline taught by you

- 2 - 83(b)

and Dr. Brahm Prakash is very much with ~~you~~ me. But somehow both of you have never encouraged demeaning servitude; it is not in my grain either. So I work hard, show respect, etc as a reasonable, rational individual. But that is not enough: there are now tens of top 'scientists' who resort to servitude to the 'persona' -- I don't do it. Nor Dr. V. Krishnamoorthy..

The desire for 'control' and demand of 'servility' is perhaps two orders of magnitude more than that of Prof. R. Rao..

I will continue to <sup>do</sup> my tasks in the best of the traditions I have been brought up... I have the courage and the mental fortitude. The desire for holding 'positions' — especially within the S&T community —

- 3 - 83(e)

had disappeared long ago; I had explained to you my reasons & the mental state. But the "Be ye the lamp unto thyself..." is still very much there; I don't think the lamp can be put out that easily: it will end, perhaps, with the end of this material body...

I don't want you to worry about this nor do I expect any action... just to keep you informed; to share the agony... the eternal bonds remain...

With regards & respects

Yours affectionately

Raja

New Delhi

22-8-90

83(d)

MINISTER OF STATE FOR SCIENCE & TECHNOLOGY

Principal Secretary to Prime Minister had desired that a review be conducted concerning the progress of TIFAC. A meeting of TIFAC was held on July 16, 1990 which was essentially meant to present a status report on TIFAC and obtain the comments of the members present. On August 3, 1990 a copy of the minutes of the 13th TIFAC Council meeting held on July 16, 1990 were sent. I had asked my PS to obtain a short executive summary of these minutes which could be forwarded to PMO on an interim basis: I also desired to have information on various items and actions taken, in respect of the points I had raised at the meeting. I intend to take a review of TIFAC with Chairman TIFAC, Secretary DST and yourself shortly. I would like for this, all the documentation so far brought out by TIFAC and the extent to which it has been distributed/made use of, etc. With regard to various activities, I would also like to see explicit target dates set/achieved. I had earlier asked for a list of staff employed by TIFAC with details of qualifications, experience, dates of appointment; as also of Consultants since TIFAC was constituted; in the case of latter, I would like to know what were the tasks assigned to them for which they were appointed and which of these have been accomplished.

I would like to have the above in a week's time so that the review meeting can be held at an early date thereafter.

*M.G.K. Menon*

( M.G.K. MENON )  
August 11 , 1990

Shri Y.S. Rajan  
Adviser DST  
Executive Director &  
Member Secretary, TIFAC  
-----

o. Mos (507) / 90-798  
13/8/90

Recd 20/8/90  
5pm

(83)

his words, his facial expressions  
ek, I can guess what is  
wrong, what is good ek. It

helped to assess the work.

⊗ a note from M&K who was after TIFAC to fix it. It should  
come as an embroachment here as 83(a), (b), (c) & d. I had  
had sent another letter to SD along with  
the meanwhile, I had

also to "take care of" (or ponder  
to) ego of M&K. I know it  
from ~~the 1980's~~ 1970's  
since ~~then~~ I had to work

closely with him for Space  
Quality Solar cells and  
later on NNRMS ek. So much  
so, he wanted me to work for  
him in TPIC as Secretary &

he prescribes SD, who  
finally decides that I won't  
go, but he wants to place

(84)

the blame on me! That would  
come in Chapter - 5. On the  
whole MAK was okay with  
me, except when the interests of  
M Sharma ~~can~~ was involved!

Also when he wanted to demolish

VRG etc.

Having lost ~~his~~ in his  
game for NCST, MS's promotion  
to Addl Secy using NCST etc, then  
being humbled in TIFAC Council,

I had to take care of him.  
Like all the para-seekers (fame-  
seekers), he also desires publicity.

So I requested him to the  
The Minister's Message for  
TIFAC News, which was

(85)

brought out elegantly by  
courtesy of R. Narasimha, Director NAL.  
Srinivas Bhogle of NAL & It  
was probably one of the best  
Newsletter from a Govt. agencies

The first issue had such  
message from K. R. Narayanan.

So I got MGR to write  
a message for the issue

Dec ~~18~~ 1989 - March 1990.

I am continuing that  
brief message as a part  
of this write up. It explains how  
much keen he was that he  
was the originator of TIFAC

→ Go to TIFAC New  
page...

"Assessing technologies in the Indian context"  
was an useful message for us against CNR type-grups!  
That issue contains some fine

articles by Dr. S. Ganguly, Executive  
Vice-Chairman & MD of ACC on  
rationale behind TIFAC

A article on New & Emerging  
Technologies, on mobile robots

and its projected market. News  
from TIFAC Line - Major Press

meet by VK, VRG, & Sanjib  
& me. A thought provoking

~~article~~ <sup>interview</sup> by N. K. Sharma Chair HUDCO  
on urban planning & construction. &

then from TIFAC Library. We

had invested ~~great~~ <sup>quite</sup> considerably

on getting some of the best

(88)

reports (some costing even upto Rs. 30 to 40,000/-) which had concrete technology contents and linkages with future markets.

A new arrival is reported

The one ~~now~~ covered in the issue was extracts from "Key technologies for the 21<sup>st</sup> Century" by Japan Industrial Technology Association as reproduced by the National Technical Information Service ~~NTIS~~ (NTIS) of <sup>US</sup> Dept of Commerce. The new arrival report was "Neurocomputing: The Technology, The Players,"

(89)

The Potential" by Technical  
Insights Inc., Englewood/  
Fort Lee, NJ, 1987, 239 p  
(Emerging Technologies No. 29)

I used to feel sad  
(I feel sad even now  $\frac{1}{2}$  @ 2016!)  
that there <sup>were</sup> (are) no such equivalent  
ones emerging from India, in spite  
of having ~~some~~ ~~5~~ 5 IIT's  
(then), IITSc & ~~some~~ so many  
CSIR labs, ISRO, DRDO & DAE.  
Also when US Dept. of Commerce  
~~is~~ was (is still) a great source  
of information about emerging

(90)

technologies ~~as~~ we from TIAAC  
had to go knocking at their  
doors to make them aware  
of even yesterday's technologies  
which they had to adopt  
to catch. ~~Neither~~ Neither

~~Dept~~ Min of Industry, ~~Dept~~ Min of  
Comm or any of those ministries  
cares about what ~~is~~ was  
the technology status and what  
was emerging in the world ~~is~~ not  
just the ~~developed~~ developed  
world but also other emerging  
nations like Korea, Israel,

(91)

Thailand, China etc.) They  
were all in Supreme State  
of Complacency! India <sup>for them</sup> was  
a closed world which they  
ruled and ~~in~~ on which they  
felt they had absolute  
control. They had to manage  
the "politics" of democracy  
and the pin pricks of the  
public accountability systems  
(like audit, courts etc). Media  
was subservient to them and  
they also followed the same path.  
~~An event~~ ~~Date~~ Nothing of S&T

(92)

would be reported unless there was a big political figure (Minister etc) who ~~was~~ made an ~~inaugural~~ inaugural speech; it is so, even today (@ 2016) except for the addition of some NRT interaction!

Party S&T

S&T leaders were

also responsible partly for such a state of affairs. They were only obsessed with their own "power over the S&T community" and their "freedom" to enjoy their

(93)

~~freedom~~ "freebies" from the system, without being accountable to deliver "end results" for using "tax payer's money".

They considered it their "entitlement" to get paid well, to get funded for their pet projects, without being asked any questions.

That was their concept of "autonomy" = or "scientific and academic freedom".

Only SD was different on this matter; he had

(94)

told me several times that when the funds from ~~public~~ govt (public or tax payer money) was high, there was a need for public accountability. He lives that vis-a-vis ISRO including the outreach to media and openness to them. We never fudged figures or reports for the Planning Commission or even in answers to the Parliament questions.

But the general pattern of S & T leaders was to be ~~con~~ contemptuous of "bureaucrats". But they would

(95)

fall at the feet of bureaucrats  
who ~~had~~ to release their  
funds. The way the "scientific  
big wigs" were genuflecting  
before the Joint Secretaries of  
DST (I have seen in  
person since 1988 when  
I joined & had seen earlier  
when I used to visit DST —  
example the Chatterjee in  
the ~~Menon~~ MAK era as  
Secy DST! & All the JS's  
knew how to pander to the  
eg. egos of the "small level  
~~politicians~~ politicians in the

(96)

scientist - boss, as they had  
dealt with many such higher  
level politicians in their career!  
They ~~had~~ knew how to take  
care of their creative comforts.

~~Only with VRG, they had~~

After that they ruled DST,  
DBT, DSIR etc! Only

with VRG, they had to be

different. VRG respected them,

involved them, but ~~to~~ nicely

indicated who was the boss!

But our ~~anc~~ so called

S&T community. ~~They were~~ would be

(97)

happy ~~with~~ in dealing with  
JS's with a pliant Science  
Secretary. Persons like CNR  
would prefer a Leay DST who was  
unlike VRG! Well, only  
when one lives through such  
~~micro~~ processes, one can  
~~also~~ understand; I had  
seen them! I ~~so~~ was  
some times sad at that;  
some times laughed. I had  
joked on these to VRG, when  
we get some relaxed times.

(98)

I am not reproducing all the contents of various TIFAC News which continues at least till I left TIFAC in 2002. It was a wealth of information to make the ~~so~~ industry persons, ~~so~~ ~~persons~~ administrators, scientist, technologists ~~are~~ aware of various things about technologies, TIFAC work etc.

There was also another mechanism called ~~st~~ S-STAC ~~with~~ (Scientific & Technology Advisory Committee) attached to

98(99)

Various socio-economic minutiae.  
We report on it later after the  
main MAK episode is over in  
this write-up!

MAK's great attraction to  
the pun of MOS (SELF) and become  
a Coar & ~~MS~~ MS & Carina  
was cracking, if not crumbling.  
He was then busy trying to  
reconstruct the old empire ~~the~~  
(with the set of followers)  
he had ~~to~~ under IG as PM  
and till RA appeared on scene.  
During those 5 years (especially 4 years  
L after SAC-PM was fired in Feb 1986)  
CNR had managed to finish many  
of them. But as it happens with

(100)

Such few politics, ~~the~~  
many of ~~the~~ his "followers" had  
switched sides to CNR - they  
& the newer additions by CNR  
started working to MUK side!

And strangely, ~~the~~  
during his tenure as MOS (S&T)  
the Member (Science) & Planning Commission  
was A. T. N. Seshan, ~~was~~ <sup>moved</sup>  
from CS to Memb Sci & became  
it was higher status! (But  
VPS did not want him as  
explains in the last chapter)  
So MUK had to tolerate  
his presence in the S&T administration/  
oversight. He had the same rank