




**DIRECTORATE GENERAL
ALL INDIA RADIO
NEW DELHI**

**REPORT ON CADRE REVIEW OF GROUP “B”,
“C” & “D” ENGINEERING STAFF OF
ALL INDIA RADIO & DOORDARSHAN**

**CADRE REVIEW COMMITTEE
2009**



FOREWORD

At the outset, I must thank the Chief Executive Officer, Prasar Bharati, for entrusting the sensitive task of Cadre Review & Restructuring to me and to a small team of dedicated officers. I was overwhelmed by the affection and confidence reposed in me by Members representing Staff Associations who were made a part and parcel of the Cadre Review Exercise. A small beginning has been made to encourage a positive atmosphere of general well being of the individual along with the well being of the organization to increase the efficiency, effectiveness and productivity of vast technical infrastructure of All India Radio and Doordarshan. All efforts have been made to suggest measures in conformity with the policies, procedures and practices prescribed by DOPT for cadre reviews/restructuring. The timing of this Report at a stage when Govt. Of India has already implemented the recommendations of the Sixth Central Pay Commission for Central Government employees and also circulated a modified assured career progression scheme, is again a positive step taken, which would substantially reduce any additional financial impact as a result of cadre review and restructuring recommended by the Cadre Review Committee. I would like to place on record my sincere and deep sense of appreciation to each and every member of this Committee as well as the convener of the meetings of the Cadre Review Committee and also the vast number of engineering employees of All India Radio & Doordarshan who have studied the draft report in depth and given their valuable suggestions through emails addressed to me. I do hope that the Report on the Cadre Review of the Group "B", "C" and "D" staff shall be considered favourably by the competent authority, for an early implementation.

(R. K. Singh)
Chief Engineer (Development)
&
Chairman, Cadre Review Committee

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**Growth of AIR & Doordarshan vis-à-vis the role of
Subordinate Engineering Staff of AIR & Doordarshan:**

From the early fifties to middle 80's , there was a phenomenal increase in power and reach of the transmitting stations of All India Radio operating in medium and shortwave bands. The transmitter power levels were raised from low and medium levels of 1, 5, 10 and 20 kilowatt 50, 100, 200, 250, 500 and 1000 kilowatt. A 1000 Kilowatt super power medium wave transmitter was installed at Mogra near Calcutta in 1969 and at Rajkot in 1971 . Four 500 kilowatt super power shortwave transmitters were installed in Bangalore in 1994. It made it one of the biggest transmitting stations in the world and it is an icon of the power and strength of All India Radio's external services. The first ever FM service was started at Madras on July 23, 1977. In 1947, AIR had a coverage of 2.5% of the area and just 11% of the population. AIR today has a network of 232 broadcasting centres with 149 medium wave, 54 shortwave and 171 FM transmitters. Today AIR's signals are available to 91% of the area and 99% of the people in our country. AIR covers 24 Languages and 146 dialects in home services. In external services, it covers 27 languages; 17 national and 10 foreign languages. The subordinate engineering staff members of All India Radio have played a very vital and critical role in the growth and maintenance of AIR services, which could not have been achieved without a fully committed and dedicated set of subordinate engineering staff members.

Television broadcasts started from Delhi in September 1959 as part of All India Radio's services. A small 500 watt transmitter beamed India's first test television programme to viewers within a 25 Km radius of Delhi . Programs were broadcast twice a week for an hour a day on such topics as community health, citizens' duties and rights, and traffic and road sense. The first major expansion of television in India began in 1972, when a second television station was opened in Bombay. This was followed by stations in Srinagar and Amritsar in 1973, and Calcutta, Madras and Lucknow in 1975. Relay stations were also set up in a number of cities to extend the coverage of the regional stations. In 1975, the government carried out the first test of the possibilities of satellite based television through the

SITE program. SITE (Satellite Instructional Television Experiment) was designed to test whether satellite based television services could play a role in socio-economic development. Using a U.S. ATS-6 satellite and up-link centers at Ahmedabad and Delhi, television programs were beamed down for about 4 hours a day to about 2,400 villages in 6 states. The program was a huge success and it demonstrated the effectiveness of satellite based television in India.. The lessons learnt from SITE were used by the government in designing and utilizing its own domestic satellite service INSAT, launched in 1982. In November 1982, the country hosted the Asian Games and the government introduced color broadcasts for the coverage of the games. To increase television's reach, the government launched a crash program to set up low and high power transmitters that would pick-up the satellite distributed signals and re-transmit them to surrounding areas. In 1983 television signals were available to just 28% of the population, this had doubled by the end of 1985 and by 1990 over 90% of the population had access to television signals. Such a rapid expansion of television transmitting network in a vast country like India is one of the greatest engineering feats achieved anywhere in the world. Today Doordarshan is the world's largest terrestrial broadcaster with over 1400 terrestrial TV transmitters located throughout the country covering approx. 88% of India's geographical area. It is needless to say that such phenomenal growth of Doordarshan could not have been achieved without the excellent work done by subordinate engineering staff members of Doordarshan.

The subordinate engineering staff of All India Radio and Doordarshan play a very important role in broadcasting: they man the 'nerve centres' of broadcast stations and are indispensable to the operation of radio/television stations. They perform a variety of jobs. They install, set up, test, maintain and operate the electronic equipment necessary to transmit radio and television signals to the public. They are also engaged in providing O.B. coverage of important local, regional, national and international events. They have to continuously monitor transmissions and adjust equipments to maintain the quality of broadcast. They perform routine and preventive maintenance of equipments to avoid breakdowns. They keep a watch over gauges, dials, or other indicators to make sure a machine is working properly. They do the troubleshooting – determining causes of breakdown and deciding what to do to eliminate the causes and put the equipment back to working condition in a time bound manner, which may be mentally and physically exhausting.

Existing Staff Strength of Subordinate Cadres of AIR & Doordarshan

Details of the categories of the subordinate engineering staff and their combined sanctioned strength are as under(all the figures are based up on the staff strength submitted to the Group of Ministers in the year 2008):

Sl. No.	Designation	Pre-revised Pay Scale	Revised pay Scale	Total Number of sanctioned posts in AIR & Doordarshan
1	Assistant Engineer	7500-12000* 6500-10500**	9300-34800 with GP of 4800	1974
2	Senior Engineering Assistant	7450-11500* 5500-9000**	9300-34800 with GP of 4600	2265
3	Engineering Assistant	6500-10500* 5000-8000**	9300-34800 with GP of 4200	4608
4	Senior Technician	5000-8000* 4500-7000**	9300-34800 with GP of 4600 5200-20200 with GP of 2800	1918
5	Diesel Technician	5000-80009 (15% of posts) 4500-7000 (20% of posts) 4000-6000 (65% of posts)	9300-34800 with GP of 4200 5200-20200 with GP of 2800 5200-20200 with GP of 2400	140
6	Mast Technician	5000-8000 (15% of posts) 4500-7000 (20% of posts) 4000-6000	9300-34800 with GP of 4200 5200-20200 with GP of 2800 5200-20200 with GP of 2400	99

Sl. No.	Designation	(65% of posts) Pre-revised Pay Scale	Revised pay Scale	Total Number of sanctioned posts in AIR & Doordarshan
7	Technician	4500-7000* 4000-6000**	5200-20200 with GP of 2800 5200-20200 with GP of 2400	3289
8	Diesel Engine Driver	3200-4900 (25% of posts) 3050-4590 (75% of posts)	5200-20200 with GP of 2000 5200-20200 with GP of 1900	131
9	Helper	3050-4590 (25% of posts)	5200-20200 with GP of 1900	2091
10	Khalasi	2650-3590 (75% of posts)	4440-7440 with GP of 1650	302

*Pay Scale for those who joined before 25.02.1999

**Pay Scale for those who joined after 25.02.1999

The Problem

It was noted that there is widespread frustration and despondence among the staff due to the stagnation in most of the above named cadres posted at AIR and Doordarshan. It was noticed that:

- Assistant Engineers have been stagnating for more than 20 years as there is a qualification bar for promotion from Assistant Engineer to JTS level. Assistant Engineers who have excelled in the domain of maintenance, special repairs, O.B.s, installation, troubleshooting, etc, but who have not acquired a degree in engineering, are not eligible for promotion to the JTS level.
- The promotion of Senior Engineering Assistant to Assistant Engineer is also highly delayed.

- The promotion of Engineering Assistant to Senior Engineering Assistant takes about 15 to 20 years.
- The promotion from the grade of Senior Technician, Mast Technician and Diesel Technician to Engineering Assistant is also very delayed. One normally gets promotion in 15 to 20 years.
- The promotional prospects in the grade of Technician and Diesel Engine Driver are also not encouraging.
- The promotional prospects of Helper/Khalasi are very bad. Majority of the staff belonging to this category retire from the service without getting even one promotion.

In a nutshell it may be seen that all the subordinate engineering cadre posts of AIR and Doordarshan need to be rationalized and restructured so that employees get adequate promotional opportunity. This will also boost up morale of the employees, and lead to greater efficiency and productivity.

Methodology adopted by the Cadre Review Committee

Cadre restructuring exercise for engineering employees in a broadcasting organization whose duties and responsibilities cannot be linked or compared to any other organization of Government of India and particularly when the frustration levels have reached very high, is not only a sensitive task but also a very difficult one. The members of Cadre Review Committee from the official side knew that their endeavour should not only be comprehensive but also be transparent and fully engaging and involving the Association Office Bearers who were made a part and parcel of the Committee. This ensured that the deliberations had the approval of maximum number of staff, who were represented by their respective Associations in the Committee. Any attempt to deal with the matter in a secretive and closed door manner would have only made the outcome unacceptable even at the outset.

Having regard to the above, the Committee planned its activities meticulously in such a manner that the association representatives and the members from the official side had adequate opportunities of interacting with each other and with the Chairman so that there was comprehensive exchange of views on all relevant

matters. A total of 18 meetings of the Committee were convened. The Chairman always favoured a solution based on consensus.

In the very first meeting of Cadre Review Committee held on 18th June 2008, the representatives of staff associations were invited to project their grievances, give their suggestions and express their expectations adopting a practical approach to solving the problems. They were also requested to offer a commonly agreed solution to the Committee, preferably in the form of a power point presentation.

As the recommendations of the 6th Pay Commission would have bearing on the Cadre Review Report, a decision was taken to wait till the 6th Pay Commission Report was finalized and published by the Govt. of India. The final recommendation of the 6th pay Commission was released by the Government on 31st August 2008 and the Committee resumed its work thereafter.

The Cadre Review Committee members discussed, analyzed and sorted out the data and examined the practical options available, in a series of meetings held on 19th September 2008, 29th September 2008, 15th October 2008, 29th October 2008. The Members representing ARTEE(Association of Radio & Television Engineering Employees), ADTEA(AIR & D.D. Technical Employees Association) and ADEA(AIR & D.D. Engineers Association) came out with a broadly agreed solution in the ninth meeting of the Cadre Review Committee held on 10th November 2008.

In the tenth meeting, the representative of ABAGDKS(Akhil Bharatiya Akashvani Group"D" Karmachari Sangh) was invited to participate in the deliberations. There was a difference of opinion among the Associations regarding the number of posts proposed as a result of restructuring and the next three meetings, i.e., eleventh, twelfth and thirteenth, were held to sort out the differences. In the thirteenth meeting held on 7th January 2009, the members representing the Associations, made a combined presentation about the cadre review proposals finalized by them regarding Group "A", "B", "C" and "D" staff and submitted it to the Cadre Review Committee. It was agreed to finalize the Cadre Review Report.

As the Chairman received a large number of emails from engineering staff members showing their concern about the Cadre Review, he convened a meeting on 27th February 2009 – 14th in the series, to discuss the emails. As this meeting was not attended by the majority of the members from the official side, another meeting was convened on 6th March 2009 - 15th in the series. This was attended by the

Members representing ARTEE, ADTEA, ADEA and ABAGDKS. The Chairman of the Cadre Review Committee specifically asked all the members representing the associations whether the combined proposal submitted by them to the Chairman of the Committee in respect of Group “A”, “B”, “C” and “D” staff had the mandate of the governing councils of the respective associations and had the approval of the majority of the members of the respective associations. All the members representing the above named associations unequivocally stated that the combined proposal submitted by them had the full mandate of the respective associations. A decision was taken to finalize the draft report and post it on the official website of All India Radio in a transparent manner for getting feedback/suggestions from all concerned for further fine-tuning and incorporating the same in the final report.

The draft cadre review report was uploaded on the AIR’s website on 13th March 2009 and as a result of the uploading, the Chairman of the Cadre Review Committee received about 500 emails from all categories of engineering staff. The emails were duly analysed for accepting suggestions wherever found feasible. Before finalizing the Cadre Review Report, one more meeting – sixteenth in the series, was held with the representatives of the staff associations on 16.4.2009, so that further suggestions they may have in the context of the emails received in response to the draft report, could be incorporated while bringing out the final report. The issues raised in the emails were discussed in great details. ADTEA pointed out that they had certain reservations about the number of posts concerning subordinate engineering cadres and IB(E)S. ADTEA sought time from the Committee to take up the issues in their Governing Council Meeting and assured the Chairman that it would submit its suggestions to the committee by 28th April, 2009. Chairman agreed to the request.

The 17th meeting was held on 5th May 2009. ADTEA submitted a proposal for incorporating certain changes in the Cadre Review Proposal and requested to keep it in line with the Cadre Review Proposal being formulated in respect of the Programme Staff. The Chairman informed the members that the DOPT guidelines have to be followed while making a cadre review proposal. All the members empowered the Chairman to take a final decision on the proposal. The last meeting, 18th in the series, was specially meant for thanks-giving by the Chairman to the members of the Committee for their co-operation and support in formulating the Cadre Review and Cadre Restructuring of Group 'A', 'B', 'C' and 'D' engineering staff.

The Members in turn also expressed their gratitude to the Chairman for his foresightedness, patience and liberal attitude in hearing all the proposals submitted by the Members from time to time and gave him free hand to prepare the final report taking into account their views and suggestions.

As a result of all these, the Cadre Review Committee arrived at certain norms of staffing for different categories of staff. Since this is a completely new initiative and is being attempted for a rational categorization of subordinate engineering staff, refining this process took some time.

**Tasks For Subordinate Engineering Staff of
AIR & Doordarshan, in next five years**

For any cadre review, the manpower requirements are to be based up on the projection of tasks to be undertaken by the staff in the next five years. The next five years are a critical phase for subordinate engineering staff as there is a grand plan for digitalization of AIR and Doordarshan. It will require a huge effort on the part of IBES officers and subordinate engineering staff to migrate from analogue to digital. There will be added task to run and operate the analogue transmissions along with digital in the transition phase while migrating from analogue to digital.

Broadcasting organizations all over the world have been switching over to digital technology as it has an edge over the conventional analogue technology. Manufacturers are switching over to production of digital transmission equipments and in coming five to seven years the production of conventional analogue broadcast equipment may be totally stopped. As digitalization is a compulsion, a sub-group of the Planning Commission on 'Going Digital' has been formed. It is headed by the Member Secretary, Planning Commission. It has laid down a path for migration from analogue transmission to digital domain and commencement of digital terrestrial broadcast in selected cities by AIR & Doordarshan as under:

- (a) Step I - Delhi -2010
- (b) Step II - All mega cities -2011
- (c) Step III - All Tier II & Tier III cities -2012
- (d) Step IV - All other areas -2013
- (e) Commencement of HDTV broadcast for Commonwealth Games 2010 by Doordarshan
- (f) Commencements of digital signal delivery at subscribers end in Cable and Satellite (C & S) homes.

- (g) Nationwide switch off of analogue broadcast both for terrestrial and C & S homes by 2015.

AIR: "Going Digital"

Accordingly, AIR has prepared a Grand Plan for complete digitalization of studios, transmissions and terrestrial and satellite links by the end of XII Plan (by the year 2017).

Replacement of AIR Medium Wave Transmitters

All India Radio has adopted Digital Radio Mondiale (DRM) technology for digitalization of transmissions. DRM provides near-FM sound quality plus the ease-of-use that comes from digital transmissions. The improvement over AM is immediately noticeable. DRM can be used for a range of audio content, and has the capacity to integrate text and data. This additional content can be displayed on DRM receivers to enhance the listening experience. In the FM band this technology is called DRM+ and its trials have been successful and technical specifications are expected to be finalized in 2009. DRM+ will offer CD quality with surround sound. DRM operation will result in substantial savings in power consumption and also provide additional channels within the existing band width for earning revenue. The DRM system makes use of the existing band of frequency allocated for MW and SW broadcast. Due to its long-range coverage in SW band, AIR can beam its signals across the continents carrying digital programmes without any fading and interference. AIR has launched regular DRM transmissions in Short Wave band w.e.f. 16th January 2009. The DRM signals are being beamed in to U.K. and West Europe on 9550 KHz. AIR has also started DRM transmission in NVIS mode for coverage around Delhi up to a radius of 800 kilometers in Short Wave Band on 6100 KHz w.e.f. 16th January 2009.

At present 148 Medium Wave Transmitters are operational in the network. The following Medium Wave Transmitters are proposed to be replaced/upgraded by digital transmitters in the XI Plan as below:

- (a) 300 KW MW DRM Transmitter at Jammu, Dibrugarh, Suratgarh, Rajkot, Jalandhar, Lucknow
- (b) 200 KW MW DRM Transmitter at Delhi'A', Ahmedabad, Bangalore, Dharwad, Jabalpur, Ajmer, Chennai'A', Siliguri, Kolkata, Itanagar

- (c) 100 KW MW DRM Transmitter at Vijaywada, Patna, Panaji, Ranchi, Mumbai'A', Mumbai'B', Pune, Tiruchirapalli, Kolkata'A', Passighat, Varanasi
- (d) 50 KW MW DRM transmitter at Mumbai'C'
- (e) 20 KW MW DRM Transmitter at Barmer, Bikaner, Chennai(VB), Lucknow, Guwahati'B', Delhi(VB), Tawang
- (f) 10 KW MW DRM transmitter at Jaipur, Kurseong, Keonjhar, Jamshedpur, Adilabad, Cuttack
- (g) Conversion of 36 Medium Wave Transmitters for DRM operation as under: (i) 300 KW MW DRM Transmitter at Cuttack, Srinagar, Imphal, Jodhpur, Nagpur (ii) 200 KW MW DRM Transmitter at Kargil, Indore, Najibabad (iii) 100 KW MW DRM Transmitter at Cuddapah, Delhi B, Kohima, Portblair, Shillong, Shimla & Raipur (iv) 20 KW MW DRM Transmitter at Aizwal, Ambikapur, Bhuj, Chattarpur, Chennai, Darbhanga, Gangtok, Jalgaon, Kota, Udippi, Rewa, Hyderabad, Leh, Ratnagiri, Rohtak, Silchar, Trivandrum, Tirunelveli, Tura, Kupwara & Naushera

Installation of DRM+ compatible FM Transmitters

At present, 171 FM transmitters are operational in AIR Network. FM expansion in Analogue mode is necessary because it is the most preferred mode of broadcasting. The quality of FM broadcast is very good and receivers are very cheap. Mobile phone manufactures have integrated FM listening in mobile sets and there is a big demand for setting up FM transmitters in small town, rural and backward areas. In the XI plan, AIR proposes to set up low power FM transmitters at existing MW Centers/DD LPTs where there is no AIR FM Coverage. Thus, AIR will be able to expand FM coverage by about 10% by population. These transmitters will have the capability to switchover to DRM+ as and when DRM+ receiver will be available to masses at affordable cost.

- In order to augment FM coverage, 37 new 1 kW FM Transmitters & 1 new 5 kW FM Transmitter at the existing sites and 300 nos. of 100 watt FM transmitters at LPT DD sites have been proposed. These transmitters shall be DRM+ (Digital Technology in FM) compatible.
- Replacement of 34 nos. of outlived FM Transmitters are also proposed by DRM+ compatible FM transmitters. These transmitters at present carry content for public service broadcasting. The Transmitters can be modified for DRM +

operation for which technical standards are expected to be finalized during the year 2009.

Replacement of AIR Short Wave Transmitters

External Services are one of the important services of AIR to keep the people of Indian origin and the world informed about the policy of Indian Government at the national & international level. The information is being provided through SW transmitters installed at Delhi, Bangalore, Panaji, Aligarh, Mumbai, Chennai, Gorakhpur. The operation of Short Wave Transmitters in DRM mode shall help to beam the programme to distant places in our country and abroad with crisp and clear audio quality, free from fading and interference commonly found in conventional short wave reception. At present there are 54 short wave transmitters under operation. The short wave transmitters are required to be replaced by DRM transmitters. One of the 250 KW shortwave transmitters at Khampur(Delhi) has already been converted for DRM operation. Conversion of 4 nos of 250 kW SW Transmitters to DRM mode is under process. AIR proposes replacement of 500 kW SW Transmitter at Bangalore which provides Vivid Bharati programme to most parts of India, by a DRM Transmitter. AIR proposes to replace another 4 short wave Transmitters, 2 nos of 100 KW Transmitters at Delhi and 2 nos of 250 KW Transmitters at Aligarh, by DRM transmitter. Due to constraint of funds in the XI Plan, rest of the short wave transmitters shall be replaced by DRM transmitters in XII Plan.

Digitalization of Programme Production facilities of AIR

There are 211 studio set-ups in the AIR network and 40 new studios are under implementation as part of spill-over scheme of X Plan. The studios of AIR have been categorized according to the facilities are provided at the centers. i.e Type –I, Type-II, Type –III, Type- IV, Above Type IV, MP(Multipurpose) and VOR(Voice Over Relay). Digitalization of Studio has already been undertaken by AIR in the 10th plan period. NBH (New Broadcasting House) is fully digital. 137 Studios have been made partially digitalized and 48 studio are being partially digitalized as part of spillover scheme of X plan by providing Hard Disc Based System (HDBS).

All the 211 AIR Studios would be fully digitalized in XI & XII Plan. It is proposed to fully digitalize 98 studios in the XI Plan and the rest of studios in XII Plan. In order to preserve rich cultural heritage programmes and important recordings of VIPs, five Archival centers i.e. at Delhi, CBS Mumbai, Kolkata, Chennai and Hyderabad are proposed in the XI Plan.

Automation of AIR News Services

At present, 44 RNUs(Regional News Units) are functioning. Seven new RNUs are proposed to be set up during the XI Plan. All the 51 RNUs are proposed to be fully automated and fully modernized. At present, News-on-Phone service is available in 14 RNUs. During XI Plan, News-on-Phone service shall be started from all the RNUs. At the end of Grand Plan, there will be a total of 64 RNUs in the network. NSD Headquarters will also have its own Data Centre and would be accessible to all the RNUs. Exclusive networking of NSD Headquarters with all the RNUs is proposed during the XI Plan for exchange of data/ news for seamless operation. Networking of NSD Headquarters with all the RNUs is proposed during the XI Plan for exchange of data/ news for seamless operation.

Digitalization of AIR Programme links

- All connectivity will be digitalized during XI Plan.
- Analogue CES will be digitalized.
- In addition new Captive Earth Stations (CES) at six locations has also been proposed.

Augmentation of AIR DTH Channels

No. of Radio channels on DTH platform are proposed to be increased from 21 to 30. continue using analogue equipments. Further the exchange of programmes among various AIR Kendras and for international events, conversion of all analogue studio equipment to digital is an essential requirement.

Webcasting & Podcasting by AIR

There is a growing trend of operating internet radio channels by broadcasters all over the world. With the expansion of internet services in India, there is a

tremendous opportunity to provide internet streaming of programmes. All India Radio has got a rich depository of music and other items. All India Radio will be streaming 20 channels on internet by the end of 2009. During XII Plan, it is proposed to put all AIR channels on internet.

Doordarshan: “Going Digital”

Doordarshan’s technical facilities basically comprise of three setups. They are (i) Studios (ii) Transmitters & (iii) Satellite uplinks. All the three technical areas/setups viz; Studios, Transmitters & Satellite uplinks have to be digitalized for attaining a complete digitalization of Doordarshan.

Digitalization of DD Transmitters

At present DD has approximately 1400 TV transmitters in the country. Under digitalization, all the existing analog TV transmitters are required to be replaced by Digital Television Transmitters (D.T.T). The DTTs shall be installed at those locations where at present analog terrestrial transmitters are functioning and there are some new locations also proposed for DTT High Power Transmitters(HPT). The analog transmitters cannot be switched off suddenly after the installation of DTTs since the viewers have to buy a STB (Set Top Box) to view a programme transmitted from a DTT. Therefore the analog transmitters as well as DTTs are to be continued simultaneously for some time. This will facilitate smooth transition from analog to digital in a developing country like India. The present status of analog TV transmitters & digital transmitters required are provided below:

Type of Transmitters.	Present Analog Transmitters	Required digital Transmitters (DTT)	Remarks
High Power Transmitter (HPT)	199	230	* All VLPTs will be closed down after completing useful life and will not be replaced
Low Power Transmitter (LPT)	830	400	
Very Low Power Transmitter(VLPT)	372	Nil *	
Total	1401	630	

It may be further mentioned that there are 130 existing locations of Analogue HPTs where DTT HPTs shall be installed while there will be 100 additional locations where DTT HPTs shall be installed by upgrading the existing analog LPTs to provide the same coverage which is being provided by existing analogue HPTs including that being covered by some of the existing analog LPTs. The existing 199 analogue HPTs include the independent HPTs transmitting National service, DD News service and Regional service. In case of DTT HPTs, a single HPT will be able to radiate 6 to 8 programme channels. It means the separate analogue HPTs required for DD National and DD News and Regional service, now in case of DTT, will not be required and only one DTT HPT will suffice for all the three services. The same is also applicable for analogue to digital LPTs. Digitalization plan has been made with the aim to provide current level of population coverage of about 91%. Presently the total numbers of transmitters are 1400 whereas after complete digitalization the number of DTTs will only be 630 which will substantially save the spectrum resource, power supply consumption, space, manpower requirement etc.

Remote monitoring/switching of Doordarshan VLPTs

In the previous plan, projects have been framed and executed for monitoring the VLPTs from remote location. The remote location is none other than the Doordarshan Maintenance Centre, the controlling authority of the VLPT. Since these VLPTs are in general unmanned, hence switching and monitoring these transmitters is essential from a remote location to ensure its healthiness. This proposal will enable to continue providing this facility at locations where remote monitoring & switching is not yet made available.

Conversion of analogue HPTs to digital HPTs

In this project it is proposed to convert 10 Nos. of analogue HPTs to digital HPTs. These analogue HPTs can be converted to a digital HPT after some minor changes in its baseband equipments etc, which will cost less than a new digital transmitter.

Conversion of analogue HPTs to digital LPTs

In this project it is proposed to convert 60 Nos. of analogue LPTs to digital LPTs. These analogue LPTs can be converted to a digital LPT after some minor changes in its baseband equipments etc, which will cost less than a new digital transmitter.

Frequency conversion of existing analogue HPTs & LPTs

Each terrestrial transmitter, whether a HPT or a LPT, uses only one frequency for transmitting its signal. This frequency is allocated after obtaining the clearance from the WPC [Wireless Planning Commission], for which a payment is required to be paid to the WPC. Each transmitter is frequency dependent and whenever another transmitter is installed and operated having the same frequency, interference will occur between the signals transmitted from these two separate transmitters. In order to avoid this interference separate frequency has to be got approved from the WPC for that location.

DTH sets in places of VLPTs closed down

With the digitalization of the terrestrial transmitters there will be a reduction in the numbers of the transmitter and some VLPTs [Very Low Power Transmitter] will be closed down. These VLPTs will be closed down because the cost of a digital VLPT will prove to be expensive vis-à-vis the DTH service which is already available in these areas. Once these VLPTs are wound up, their coverage areas will be provided with DTH systems for viewing the DD programmes. It is estimated that 200 Nos. of DTH systems shall be supplied per VLPT being closed and there will be 375 Nos. of VLPTs which shall be closed.

Value added service over Digital Terrestrial Transmitters of Doordarshan

The digital transmitters can also be used for providing value added services to the viewers. These value added services will come in demand after the DTTs become operational. These value added services will be like data broadcasting, T-commerce, encryption system, SMS over DTT etc.

Digitalization of Doordarshan Studios

- (I) Full digitalization of the existing partially digitalized studios at 31 locations in Doordarshan network in India

- (II) Full digitalization of the existing analogue studios at 12 locations in Doordarshan network in India
- (III) Digitalization of Archiving facilities in Doordarshan network
- (IV) Digitalization of Automation of News Production & Transmission related facilities in Doordarshan network
- (V) Modernization & Augmentation of studios by providing digital cameras, digital production switchers, character generators, frame synchronizers, video servers, logo generators, robotic camera setup etc. at existing 66 locations
- (VI) Augmentation of recording and post production facilities by providing digital VCRs, Edit suites etc. at existing 66 locations
- (VII) Augmentation of field production facilities in the existing OB/EFP/ENG vans at 25 locations out of the existing 66 studio centre locations by providing digital camcorders etc.
- (VIII) Strengthening of audio facilities, monitoring & measuring facilities, studio & ENG lighting facilities etc. at existing 66 locations
- (IX) Augmentation of power supply system equipment etc. at existing 25 locations
- (X) Replacement of essential services equipment including air-conditioning plant, lighting system, diesel generators, power supply equipments, acoustic treatments, technical furniture etc. existing 66 locations
- (XI) Providing latest state of the art equipments at the studio centres for modernizing the already existing production and post production facilities at existing 66 locations
- (XII) e-Governance, IT related schemes
- (XIII) R&D and training
- (XIV) Induction of new technologies in the Network
- (XV) Introduction of High Definition Television(HDTV)
- (XVI) Expansion of DD services by setting up of 5 new digital studio setups

Modernization, Augmentation & Replacement of Satellite Broadcast Equipment

There is a scheme for “Modernization, Augmentation & Replacement of Satellite Broadcast Equipment”. The scheme has been formulated for complete digitalization of satellite uplink in the DD network. The details of the present proposal item-wise are mentioned below:

Upgrading of Earth Stations of Doordarshan

18 Nos. of existing earth stations will be upgraded. At present 18 state capital earth stations in 2+1 mode are running with current state of the art compression equipments. These equipments will complete its life, and also the existing compression algorithm will become older and inefficient. So the OEM(Original Equipment manufacturer) will stop supplying spares and service support due to obsolescence. Hence, under this scheme it is proposed to upgrade the earth stations by replacing the compression system, base band (from analogue to digital), PDA and RF equipments with new models with advanced features and software.

Replacement of Earth station Compression Equipments of Doordarshan

Present earth stations running with current state of the art compression equipments will complete its life, and also the existing the compression algorithm will become older and inefficient. So the OEMs will stop giving spare and service support due to obsolescence. Hence, under this scheme it is proposed to upgrade the earth stations by replacing the compression system at 5 places.

Providing VSAT terminals

There is a need to install more VSAT terminals at many stations, in addition to the already 120 locations being undertaken across the country for collection of News feeds in shortest possible time. These additional terminals will work with the already proposed VSAT Hub with Upgradation. These terminals will provide additional services for intranet and VoIP etc. These terminals will be provided at District headquarters for News Feeds. VSATs will be provided at 473 locations more in this project.

Upgrading of 10 regional centres of VSAT terminals

As the number of VSAT terminals increases in states there will be a requirement of additional hardware and software at DDKs located in state capitals. To meet this requirement under this scheme it is proposed to upgrade receiving, decoding, storage and routing infrastructure at 10 stations.

Expansion of VSAT hub at Delhi

As the number of VSAT terminals increases there will be a requirement of additional hardware and software at the VSAT Hub. To meet these requirements under this scheme, it is proposed to upgrade receiving, decoding, storage and routing infrastructure at Hub earth station at Todapur in Delhi.

Replacement of DSNG units of Doordarshan

Seven DSNG units that need to be upgraded will be replaced with new DSNG vans (1+1 mode) with advanced features and software, after they have served their useful life and the compression algorithm becomes old & inefficient.

Providing New DSNG Terminals in Doordarshan

At present DD is having DSNGs stationed at major DDKs in some of the state capitals. For expansion of news contribution links under this scheme it is proposed to provide one C-band DSNG Van (1+1 mode), with advanced compression and modulation equipments, each at remaining state capitals and other major stations for coverage of news and other programs. 11 DSNG terminals will be provided through this project.

Replacement of IRDs with DVB S-2 based IRDs in Doordarshan

Based on the request of DOS(Department of Space) to improve bandwidth efficiency by using better compression and modulation in satellite communication, Doordarshan has already prepared a road map to achieve it in a phased manner. As a first step in 11th plan, DSNGs and contribution links are to be implemented using DVB-S2 standard and replacement of some of the IRDs with DVB-S2 technology. This will help in reduction in band width and saving operational cost. The remaining Existing IRDs will be required to be replaced by DVB-S2 technology as the New DSNGs, Earth stations and Up-gradation of Earth stations will come up with DVB-S2.

Replacement of Uplink PDAs and accessories in Doordarshan

Earth stations having Old PDAs at 8 locations will be required to be replaced with NEW PDA system as per new IR/GR guidelines.

Providing New Earth station in Doordarshan

At present at least one earth station has been provided in each state i.e. at state capital and co-sited with DDK. Very often there are demands for more earth stations in every state where PGFs are functioning. Under this scheme it is proposed to

keep a provision of 2 channel uplink facility where PGF are functioning. As such 20 new earth stations will be provided through this project.

Up-gradation of Carrier Monitoring Station at Todapur

The Carrier monitoring Earth station being implemented for monitoring of satellite services uplinked for Earth station will need to be upgraded for inclusion of monitoring facilities of carriers due to change in compression & modulation technologies for better efficiency and new services from new earth stations.

Evolution of norms for Restructuring

The Report of the Sixth Central Pay Commission, finalized by the Government on 29th August 2009, has made recommendations of elongated Pay scales with Pay Bands. It has also recommended a modified ACP scheme, which has been accepted and notified by the Government on 9th May 2009. These two factors, more or less, have taken care of the stagnation malice affecting the staff, to some extent. What needed to be attempted was only a rational norm for approach to restructure the subordinate engineering cadres in such a manner that its desired output, effectiveness and the human resource could be properly marshalled and multiplicity of levels in the hierarchy could be dispensed with. It is the considered view of this Committee that this is the proper and correct approach as against the normal approach of creation of higher level posts to open up channels of career progression. Moreover, such an approach would only result in a cumbersome and lopsided organizational structure which would not contribute to or increase in the organizational efficiency. Since it is very essential that whatever norms are being developed for cadre restructuring in respect of subordinate staff of AIR and Doordarshan, it should be workable, acceptable and easy in implementation. The Committee observed that there are too many grades of the subordinate staff in AIR and Doordarshan and the duties and responsibilities are, in many cases, overlapping one another. Too many grades have greatly restricted staff members' promotional prospects.

The cadre structure of subordinate staff should satisfy the following criteria: (a) different grades of the Service should reflect distinctly different levels of duties and

responsibilities (b) structure of the cadre should be such as to facilitate smooth movement of personnel, both vertical as well as horizontal and (c) It should promote maximum efficiency commensurate with expenditure incurred on wage bills.

The Committee duly considered the duties and responsibilities of all the existing ten subordinate engineering cadres and recommends a rationalization of staff structure of only four grades as under:

Dispensing with the multiplicity of levels in Group "D"

There are two categories of staff in Group "D": Helper & Khalasi. Helpers are required to have passed 8th standard and possess a working knowledge of electrical and mechanical machines. Khalasis are required to have passed 8th standard and possess good physique. Helpers have been traditionally engaged in carrying out a number of important activities in studios, transmitter and O.B. coverage. They perform a variety of works, such as providing a helping hand in the maintenance of equipments, cleaning and wiping off dust from electronic equipments, lifting or shifting of equipment/furniture, helping technical operations staff in lighting, tele-cine and audio, providing a helping hand in maintenance of air-conditioning equipment, locking/opening of technical area in presence of the shift-in-charge, working as camera dollyman / cableman in studio OB sports, laying cables and providing other manual help in establishing microwave links during OB/ENG coverage and a variety of works where a helping hand is to be provided. Over a period of time, Khalasis are performing nearly the same duties as that of Helpers, i.e., lifting and shifting of equipments, cleaning of equipments, providing a helping hand in carrying out maintenance activities, etc.

As per the Schedule 26 and 10 of AIR Manual, the pay scales of the posts of Helper and Khalasi were as follows:

Helper: Rs 800-15-1010-EB-20-1150

Khalasi: Rs 775-12-955-EB-14-1025

The two pay scales were merged by the Ministry of Finance w.e.f. 1.04.1995 in to a single scale of Rs 775-12-871-14-995-15-1030-20-1150. Later the 5th Pay Commission did not give any replacement scale of this merged scale. However the Ministry of Finance vide its O.M. No. 06/1/98-IC-1 dated 12.02.2001, granted the replacement scale for this as Rs 2610-60-2910-65-3300-70-4000. Since the two scales were merged, Khalasis were kept at the bottom of the Seniority list of the

merged scale as they were junior to Helper and no promotion could be granted to a Khalasi in the same scale as Helper used to be a promotional post for Khalasi. In any case the sanctioned strength of Khalasi is 302 against that of Helper which is 2091(as per the data supplied by the Department to the GOM in 2008). Hence it was proposed that the above two posts should be merged in a single post of Helper. The Prasar Bharati Board in its 82nd meeting held on 31-03-2008, approved the merger of these two posts.

Functioning of AIR and Doordarshan has become more complex. Hence we need people with greater skills, particularly to deal with complex tasks in digitalized environment of AIR and Doordarshan. We need not employ 8th standard pass people when the need of the hour is to have multi-skilled employees who can perform a variety of jobs. As recommended by the sixth Pay Commission, all Gr. 'D' pay scales in the Government will stand upgraded to Group 'C' along with the incumbents after suitable retraining wherever required with no further recruitment in existing Gr. 'D' posts. Therefore the Committee recommends that the recruitment in this grade should be from amongst the candidates possessing minimum qualifications of ITI. The Committee also recommends that this post should be re-designated as "Broadcast Assistant" with a scale of Rs 5200-20200 in PB-1 with Grade pay of Rs 2800. Consequently, all future recruitments to the cadre of "Broadcast Assistant" shall be made based up on minimum qualifications of ITI. However, the existing employees in this grade will also be placed in the corresponding revised pay scale and they will be considered at par with future recruits for promotional purposes. The Committee recommends that suitable training courses be arranged for up-gradation of the skills of the existing employees in the grade.

Dispensing with multiplicity of levels in Group "C"

(a) Technician & Diesel Engine Driver

There are two categories of Group "C" staff with the requirement of possession of a trade certificate for direct entry to these grades as per the Recruitment Rules for various posts in AIR Manual : Technician and Diesel Engine Driver. Majority of the directly recruited Technicians serving in the Department possess a two year trade certificate from ITI in radio/TV/electronics/electrical/air-conditioning & refrigeration. Similarly, majority of the directly recruited Diesel Engine Drivers possess a national trade certificate issued by the Director General, Employment & Training or the

National Council for Training in Vocational Trades in the trade of mechanic(internal combustion engines)/ three year experience certificate for operation and maintenance of diesel engines by a reputed workshop/factory or a generating station. Technicians assist the Shift-in-Charge in a variety of ways, in carrying out operation and maintenance of transmitter, studios, earth stations, microwave links, air-conditioning plants, Switch Gear equipments. They also assist in O.B. coverage. Diesel Engine Drivers are required to operate diesel generators. Diesel Engine Drivers also possess a sound knowledge of electrical equipments, electrical panels and mechanical devices and, many a times, perform duties which are normally performed by Technicians. It is a common site to find Diesel Engine Drivers in assisting the Shift-in-Charge in carrying out routine maintenance, manning consoles, helping in troubleshooting, etc. As there is overlapping of duties of Technicians and Diesel Engine Drivers and as the Organization, too, has declared Diesel Engine Driver a dying cadre(there is a sanctioned strength of only 131 Diesel Engine Drivers against 3289 of Technicians, as per the data submitted by the Organization to GOM in 2008), the Committee recommends that these two posts should be merged and re-designated as Junior Broadcast Engineer.

The Junior Broadcast Engineers shall look after radio and television broadcasting equipment and transmitters. They will carry out regular maintenance work as well as repairs of equipment when they are damaged. They should be fully aware about the latest developments in electronics, broadcasting signals, basic mechanics and computer broadcasting equipment. They must be adaptable in order to make use of new digital technology which is going to be inducted in a big way in AIR and Doordarshan in the XI Plan. The Committee recommends that the basic qualification for fresh entry to Junior Broadcast Engineer's cadre should be a three year Diploma in Engineering majoring in electronics, computer engineering or telecommunications.

Fourth and Fifth Central Pay Commissions established the relation between pay scales and the professional cadres with minimum qualifications. Accordingly the 5th CPC had recommended the pay scale of Rs.5000- 8000 for the engineering cadres carrying the minimum required qualification of 3 year Diploma. The committee therefore recommends a scale of Rs 9300-34800 in PB2 with Grade Pay of Rs 4200 for the junior Broadcast Engineer. The scale proposed above is the replacement scale (in 6th CPC) of Rs.5000 – 8000 of 5th CPC. As per the DOPT

guidelines, changes in Recruitment Rules shall not be to the disadvantage to the existing employees, they will also be given this scale and will be treated at par with the future recruits for promotional purposes.

So far as up-gradation of skills of the existing employees in this grade is concerned, the Organization shall arrange suitable training courses for this purpose. Training and development can help the existing employees to become more productive, improve their employability and enhance their ability to command higher wages.

(b) Engineering Assistant, Senior Technician, Diesel Technician & Mast Technician

Engineering Assistants set up, operate, and maintain the electronic equipment used to transmit radio and television programs. They control audio equipment to regulate volume level and quality of sound during radio and television broadcasts. They operate radio and TV transmitters to broadcast radio and television programs.

Engineering Assistants must possess a three year Diploma/Degree in engineering/ Degree in Science with Physics as a subject/Diploma in Sound Recording and Sound Engineering awarded by FTII, Pune for direct entry to this cadre. 80% of the Engineering Assistant's cadre is filled by direct recruitment and the rest 20% by departmental promotion from Senior Technician's cadre -10% on the basis of a limited departmental competitive Examination and the rest 10% by promotion on seniority-cum-fitness basis. Senior Technicians with minimum five years of service in the grade or minimum eight years of service in the grades of Technician and Senior Technician on a regular basis or Mast Technician/Diesel Technician with minimum eight years of service in the grade can appear at the Limited departmental Competitive Examination for promotion to Engineering Assistant's cadre against 10% quota. The rest 10% quota is filled up by Senior Technicians who have completed minimum five years of service in the grade, on seniority-cum-fitness basis. There is so much stagnation in the Organization that in actual practice Senior Technicians do become Engineering Assistant only after putting in 10-15 years of service in Senior Technician's cadre.

Diesel Technician run and maintain diesel generators. They are required to possess a national trade certificate in the trade of Mechanic(Internal Combustion Engines) awarded by National Council of Training in Vocational Trades/Director

General of Employment & Training or a six year experience certificate. Their chances of promotion to Engineering Assistant's cadre are very bleak as they have to cross the hurdle of the Limited Departmental Competitive Examination against 10% quota of Engineering Assistants' vacancies. If they are lucky, they do get promotion to Engineering Assistant's cadre after 15 – 20 years.

Mast Technician's basic job is to climb tall masts and towers in AIR & Doordarshan and perform difficult tasks at heights ranging from 40 to 150 meters, such as repair and replacement of aviation lights, overhauling of feeder cables and antennas, etc . Although they are putting their lives to risk, they have suffered the most in the organization with practically very little or negligible chance of getting promotion to Engineering Assistant's cadre. They have also to cross the hurdle of the Limited Departmental Competitive Examination to get promotion to Engineering Assistant's cadre against 10% quota. Most of the Mast Technicians do not get promotion to Engineering Assistant's cadre and retire as Mast Technician even after putting in 30-35 years of service.

Out of the three cadres mentioned above, Engineering Assistants constitute the centre of gravity of the Subordinate engineering cadres and play a very crucial role in running and maintaining the broadcast setups of AIR and Doordarshan. The sanctioned strength of Engineering Assistant (4608) constitutes about 27.5% of the total strength(16817) of the subordinate engineering cadres, as can be seen in the table given below:

Subordinate Engg. Cadre	Existing Sanctioned Post-AIR	Existing Sanctioned Post – Doordarshan	Existing Sanctioned Post-Total
Assistant Engineer	491	1483	1974
Senior Engineering Assistant	896	1369	2265
Engineering Assistant	1715	2893	4608
Senior Technician	558	1360	1918
Mast Technician	23	76	99
Diesel technician	140	0	140
Technician	874	2415	3289
Diesel Engine Driver	131	0	131
Helper	287	1804	2091
Khalasi	64	238	302

All the figures shown above are based up on the data given by the Organization to GDM in 2008

Engineering Assistants perform operational duties in various areas in the studio, captive Earth Station and Transmitters. They perform duties like vision mixing, camera control, lighting, audio, VTR transmitter, microwave links, field recording on VCR, Sync sound studio, receiver section, MSR, etc., and assist engineering officers in the maintenance and installation of equipments/technical facilities and in material management works at AIR/Doordarshan Kendras/ TV Relay Centers. They control audio equipment in order to regulate the volume and sound quality during radio and television broadcasts. They operate and maintain transmitters of emission varying from a few watts to very high power levels. They operate and align satellite uplink and downlink equipments and microwave links in order to feed/obtain the clearest signal for transmission of broadcasts. They monitor strength, clarity, and reliability of incoming and outgoing signals, and adjust equipment as necessary to maintain quality broadcasts. They observe monitors and converse with station personnel in order to determine audio and video levels and to ascertain that programs are smoothly going on air. They preview scheduled programs to ensure that signals are functioning and programs are ready for transmission. They regulate the fidelity, brightness, and contrast of video transmissions, using video console control panels. They analyse equipment problems, and ensure that repairs are made; make emergency repairs to equipment when necessary and possible. They select sources from which programming will be received, or through which programming will be transmitted. They set up and operate portable field transmission equipment outside the studio.

As Senior Technicians go through the grind and learn and perform all the tasks Engineering Assistants perform in the operation and maintenance of studios, transmitter, satellite and terrestrial links, O.B.s, they have overlapping duties with Engineering Assistants. So far as Diesel Technicians and Mast Technicians are concerned, they also assist Shift-in-Charge in carrying out maintenance and operation of the broadcast setups consisting of studios, transmitters, etc. There is a sanctioned strength of only 140 Diesel Technicians and 99 Mast Technicians in AIR and Doordarshan. The Organization has already declared 'Diesel Technician' and 'Mast Technician' dying cadres. In order to dispense with multiplicity of levels, the Committee recommends that the cadres of Engineering Assistant, Senior

Technician, Diesel Technician and Mast Technician may be merged and re-designated as Broadcast Engineer.

For AIR and Doordarshan to function effectively to fulfil the rapidly escalating expectations placed on it due to a massive plan of digitalization, it is essential that the organisation have the right staffing at all levels and right people with necessary competencies and commitment are in right place at the right time. This calls for an appropriate staffing strategy and the necessary authorisations from the Government to implement the strategy in a consistent manner. The end result of a successful staffing strategy for AIR and Doordarshan is to have the right people, in right numbers, with right skills, in right places, at the right time. Achievement of this objective is possible by first introducing appropriate entry qualification for the Broadcast Engineer. The Committee recommends that the qualification for direct recruitment to the post of Broadcast Engineer should be a degree in engineering. However the existing employees in the grade should not be at disadvantage with the proposed change in the Recruitment Rules and they will be considered at par with the future recruits for promotional purposes as per DOPT norms. The Committee recommends that the existing employees in the grade should be encouraged to attend training programmes for up-gradation of their skills. The training programmes should aim to help the existing employees to achieve their maximum potential and make an effective transition from analogue to digital domain.

Broadcast Engineers shall have to supervise the operations of Transmitter with varying powers of emission. The tower, mast and the aerial field have to be properly maintained. The Transmitter has to be properly aligned for correct frequency and power as per international regulations and standing wave ratio (the ratio of power transmitted to power reflected back to the Transmitter), has to be kept at minimum level. The parameters relating to noise, frequency response and distortion have to be constantly monitored and kept within permissible limits for good reception. The Broadcast Engineer shall have sufficient knowledge about carrying out R.F. measurements with VIM, CRO and Spectrum Analyzer. Most of the places where these transmitters are installed do not have stable power supply and diesel generators have to be run and maintained. It is easier to say this but very difficult to do it under actual field conditions. To cite a few examples, Mon, Tuensang, Williamnagar, Saiha, Nongstoin, etc in the North East, have got 1 kilowatt Transmitters installed and there are no agencies to take up any maintenance work

of diesel generators and it shall be left to the ingenuity of the Broadcast Engineer Assistants to maintain the standby generators. In many cases no spares are available and the Broadcast Engineer shall have to apply his mind to provide an indigenous substitute in case of non-availability of spares. AIR broadcast setups are not like other public utility services such as water supply, electricity, telephone, gas supply, etc. There are very strict standards set for tackling breakdowns. Any interruption for more than 15 minutes is considered to be a major breakdown. If a breakdown occurs it is absolutely essential that guidance and supervision of a Broadcast Engineer is readily available for solving the breakdown. It is imperative that the Broadcast Engineers having proper supervisory capacity are posted at the station. Broadcast Engineers shall have to deal with very high voltage and currents at very high power and super power transmitters. A high power radio/ TV transmitter may have a number of power modules/ blocks to generate the required power. The power generated by individual power blocks have to be properly combined and added in magnitude as well as phase. The power combination is a complex subject. While building the required power, very high voltages and currents at R.F. frequency have to be dealt with taking all the safety measures for the equipment as well as operating personnel. In case any breakdown occurs, troubleshooting has to be done many times with the high tension voltages/currents in ON condition. This is a hazardous task and it requires very expert handling. This aspect of the Broadcast Engineers' job makes it a unique one without having any analogy to any other job in the Govt of India.

The power bills of Transmitters run in lakhs of Rupees and if power is wasted due to increase in Standing Wave Ratio of the Transmitter, the organization will be loosing a substantial amount of money in its power bill. Keeping the Standing Wave ratio of the Transmitter at minimum value requires knowledge and expertise and shall be one of the essential duties of Broadcast Engineer. The Very High Power/Super Power Transmitters generate enormous amount of heat and unless a proper cooling system is operated and the heat removed it may result in melting down of the components. The Transmitter employs air as well as water cooling. Very big capacity air blowers and water pumps are installed for the cooling of the Transmitter. The cooling systems are to be constantly checked and in case of any deficiency, immediate action has to be taken. The Transmitter power is again generated by combining a good number of individual power blocks. For example a

300 Kilowatt Transmitter employs 256 power blocks with a combiner to combine the power of the 256 power blocks. This is a very complicated operation. If not handled properly, not only the power will be wasted but it may also result in heating and melt down of the combiner components. The Broadcast Engineers shall be required to handle these costly and sophisticated devices, which may be in the price range of Rs 5 to 30 Crores. The handling of such costly machines do not find any analogy in any other Department of Govt of India.

The Broadcast Engineers shall, at times, be required to provide O.B. coverage to events of national/international importance and the VVIPs like the Prime Minister and President of India. During such O.B. coverage, if something goes wrong, it shall be left to the ingenuity of the Broadcast Engineer to take corrective measures in a split second so as to ensure that viewers/listeners do not lose the vital programme due to any technical hitch. This aspect of the Broadcast Engineers' job, again, cannot be linked to any other organization of the Govt. Of India.

Broadcast Engineers' job shall also be creative one where the results of their work shall be viewed by many. While engaged in such creative job, a good deal of autonomy shall have to be granted to the Broadcast Engineer as such creative jobs require decisions to be often taken without consulting their superiors. On the other hand, there shall be very often pressure on the Broadcast Engineer to meet deadlines and this can sometimes be mentally and physically exhausting. There is also pressure associated with the job's demand for accuracy, where errors can negatively impact the quality of the broadcast. Important skills needed in a Broadcast Engineer include an ability to communicate well, both orally and in writing; manual dexterity; attention to detail; and reasoning and problem solving skills. They also need to be skilled in information technology due to the widespread use of digital recording, editing, and broadcasting. Not surprisingly on account of the above stated facts, the Committee recommends a scale of Rs 9300-34800 in PB-2 with Grade Pay of Rs 4800, for the Broadcast Engineer. The Committee has recommended a Grade Pay of Rs 4800 in view of the fact that (a) the job description of a Broadcast Engineer cannot be linked to any other job in the Govt. Of India and (b) Unless an attractive Pay Package is offered for degree holders, there is a very little chance of their joining the Organization in view of attractive pay packages being offered by the IT sector or even autonomous organizations of the Govt. Of India.

Dispensing with the Multiplicity of Levels in Group “B”

There are two categories of Group “B” posts in AIR and Doordarshan: Assistant Engineer and Senior Engineering Assistant. Both the posts do not have any direct recruitment component. The feeder cadre for promotion to Assistant Engineers’ cadre is ‘Senior Engineering Assistant’ and the method of promotion is: 75% by Limited Departmental Competitive Examination and 25% by Seniority-cum-fitness. Senior Engineering Assistants having minimum three years of regular service in the Grade or with minimum eight years of combined regular service in the grades of Senior Engineering Assistant & Engineering Assistant are eligible to appear for the Limited Departmental Competitive Examination against 75% quota. The rest 20% quota is filled by Senior Engineering Assistants having a minimum three years of regular service in the grade on seniority-cum-fitness basis. The feeder channel of promotion to Senior Engineering Assistant’s grade is ‘Engineering Assistant’. The vacancies in Senior Engineering Assistants’ cadre are filled by those Engineering Assistants who have completed three years of regular service in the grade on seniority-cum-fitness basis. The minimum qualification for promotion to the cadre of Assistant Engineer is a three year Diploma in Engineering/Degree in engineering/Degree in Science with Physics as a subject/ Diploma in Sound Recording and Sound Engineering awarded by FTII, Pune.

Assistant Engineers organize and supervise all the activities relating to operation and maintenance of studios, transmitter, studio-transmitter links, satellite uplinks and downlinks, O.B. equipments, etc. They not only supervise operation and maintenance activities but also provide back-up and technical support in tackling special repairs and breakdowns. They are in-charge of maintenance and operation of hardware and software for server/client based studio automation system for transmission /recording /editing /dubbing /transcription of programmes as well as news automation systems and act as a system administrator for server/client based studio networking system. The responsibilities also include operation and maintenance of Master Switching Room (MSR) routing different studios to different transmission lines including satellite linking through server based system within the studio complex. They supervise the maintenance and operation of O.B. equipments, terrestrial and satellite links. They supervise the maintenance of air-conditioning

plant, diesel generators and UPS systems. They also look after the material management activities at the station. They also share administrative responsibilities at the stations.

Assistant Engineers act as Technical Director (TD) in Doordarshan Kendra. The TDs must be competent in vision switching and CCU control, and be familiar with camera operations and functions. They perform two different types of roles as TD, although both roles are often combined: (a) operating vision control and/or switching equipment : this is an operational role in which the TD is part of the production crew. The TD takes the position of vision switcher or CCU controller. In addition, the TD monitors the technical aspects of all video sources — gain levels, chroma phase, synch timing, etc. It is the TD's job to ensure all vision sources are maintained at "broadcast quality" and (b) Technical/engineering management and support: in this situation the TD oversees the technical aspects of a production. His duties include: planning the technical aspects of a production, ensuring equipment is ready and technical checks are completed before production begins, assisting with camera settings & lens choices, assisting with equipment changes and modification, responding to equipment failure, fixing problems or finding work-arounds, train staff on equipment use, safety, etc.

In fact, Assistant Engineers in Doordarshan Kendra perform many more tasks, such as, as an on-line editor, transmitter engineer, MSR engineer, in-charge of Captive earth Station, in-charge of ENG team, in-charge of IT Section, in-charge of archives, in-charge of VTR Section, in-charge of O.B./DSNG team, in charge of Microwave Link, maintenance engineer, etc. Apart from the roles mentioned above, Assistant Engineers, as already stated, shoulder administrative responsibilities.

In nutshell, the Committee accepts Assistant Engineers as the backbone of the supervisory staff in AIR and Doordarshan. The duties of Senior Engineering Assistant are similar to those of Assistant Engineers and both these cadres are performing interchangeable duties at AIR and Doordarshan stations. The Committee does not favour multiplicity of levels in Group "B" and recommends merger of these two grades in to one, to be re-designated as Broadcast Executive.

Group B officers of Departments of Posts, Revenue, etc. will be granted Grade Pay of Rs.5400 in PB-2 on non functional basis after 4 years of regular service in the grade pay of Rs.4800 in PB-2. Had the AIR and Doordarshan engineers' case been studied by the 6th CPC, AE, being a highly professional cadre in Broadcasting

field, might have been considered for the pay scale in PB-2 with Grade Pay of Rs.5400 from the entry level itself. Hence the Committee recommends a scale of Rs 9300-34800 in PB-2 with Grade Pay of Rs 5400 for the Broadcast Executive.

Stagnation of Assistant Engineers not possessing a degree in engineering

The I.B.(E).S. Rules stipulate that 50% of JTS level posts shall be filled by direct recruitment and the remaining 50% by promotion from the cadre of Assistant Engineers having five years of regular service in the grade and who possess a degree in engineering. There are a large number of AEs serving in the organization who do not possess a degree in engineering, but nonetheless have got excellent track record in the field of maintenance and operation, servicing, installation, research and training activities. They have been denied promotion to JTS level on account of qualification barrier. The weightage of experience should not be denied to such AEs.

Previously a system of promotion from AE to JTS level of I.B.(E).S, had already been agreed to by E-in-Cs and DGs of All India Radio & Doordarshan by removing the qualification barrier of engineering degree. While passing judgement in the case of opening promotional channel for AEs of AIR & Doordarshan, who have been stagnating due to lack of an engineering degree, Hon'ble Supreme Court in their judgement dated 06/12/2003, had observed that "Such a stagnation is not healthy for any department and it is up to the department to find out some ways to remove the stagnation in consultation with association representing the employees". Accordingly, Prasar Bharati & DG:AIR had prepared the proposal for promotion of Assistant Engineers with Engineering Degree and Diploma, on the basis of differential length of service, to the JTS level.

The Central Engineering(Civil) Group "A" Service Rules provide promotion of Assistant Engineers directly to STS level: 33.3% of the STS level posts to be filled by promotion from JTS level, 33.3% by promotion from Assistant Engineers possessing a degree in engineering and the remaining 33.3% by promotion from Assistant Engineers who have a diploma in engineering. An analogous system of promotion needs to be adopted for promotion from Assistant Engineer (to be re-designated as Broadcast Executive) to STS level in I.B.(E).S. to remove stagnation due to lack of a degree in engineering. The Committee recommends 33.3% quota for promotion from JTS level to STS level, 33.3% quota for promotion from Assistant

Engineer(to be re-designated as Broadcast Executive) to STS level for those Assistant Engineers(to be re-designated as Broadcast Executive) who possess a degree in engineering or equivalent qualification and the remaining 33.3% for promotion from Assistant Engineer(to be re-designated as Broadcast Executive) to STS level for those Assistant Engineers(to be re-designated as Broadcast Executive) who possess a degree of BSc/ Diploma in engineering.

Stagnation of Senior Engineering Assistants due to lack of Degree of BSc/Diploma in engineering/Degree in engineering

The feeder channel of promotion to Assistant Engineers' cadre is 'Senior Engineering Assistant'. The minimum qualification prescribed for promotion to the cadre of Assistant Engineer is a three year Diploma in Engineering/Degree in engineering/Degree in Science with Physics as a subject/ Diploma in Sound Recording and Sound Engineering awarded by FTII, Pune. A number of Senior Engineering Assistants who have got excellent track record in operation and maintenance activities but who do not possess the above said qualifications are not getting promotion to Assistant Engineers' cadre. Stagnation lowers the morale of the employees and reduces the efficiency of the Organization. The committee has already recommended the merger of Senior Engineering Assistant with Assistant Engineer(to be re-designated as Broadcast Executive). The Committee further recommends that Senior Engineering Assistants possessing even ITI trade certificate shall be considered fit for getting in to the merged grade of Broadcast Executive, to alleviate their suffering due to stagnation in Senior Engineering Assistants' grade.

There is a unique aspect of this entire cadre review exercise: The task of cadre Review and restructuring of Group "A", "B", "C" and "D" staff has been taken up and finalized in an integrated way by the Committee with the proposals of Group "A", "B", "C" and "D" staff dovetailing in to each other. All the engineering cadres right from Helper to E-in-C have been restructured and integrated in a single scheme of restructuring with the full mandate of the four major associations, viz., Association of Radio & TV Engineering Employees, All India Radio & Doordarshan Technical Employees Association Group "D" Karmachari Sangh..

The method of recruitment, field of promotion and minimum qualifying service in the lower grade for appointment/promotion to Subordinate Engineering Cadres of All India Radio & Doordarshan before Cadre Restructuring are as shown below:

Sl. No.	Grade/ Name of Post	Method of recruitment	Field of selection and minimum qualifying service for promotion
1	2	3	4
1	Junior Time Scale	(i) 50% By promotion, (ii) 50% by direct recruitment of engineering graduates	Assistant Engineers of the All India Radio / Doordarshan (excluding those in Civil Construction Wing) with 5 years regular service in the grade and possessing Degree in Engineering.
2	Assistant Engineer	(i) 25% By promotion through Seniority-cum-fitness quota (ii) 75% by promotion through Limited Departmental Competitive Examination	(a) Senior Engineering Assistant having three years regular service in the grade/ Senior Engineering Assistants having a combined service of eight years in the grade of Senior Engineering Assistant and Engineering Assistant (b) Possession of Degree in Engineering/Diploma in Engineering/BSc
3	Senior Engineering Assistant	By promotion	Engineering Assistants having three years regular service in the grade
4	Engineering Assistant	(i) 80% by Direct Recruitment of fresh engineering graduates/diploma holder/BSc (ii) 10% by promotion on seniority-cum-fitness basis (iii) 10% by promotion through Limited Departmental	Senior Technicians having five years regular service in the grade Senior Technician having five years regular service in the grade/eight years of combined service in the grades of Senior Technician &

		Competitive Examination	Technician/Mast Technician or Diesel Technician having eight years of regular service in the grade
Sl. No.	Grade/ Name of Post	Method of recruitment	Field of selection and minimum qualifying service for promotion
1	2	3	4
5	Senior Technician	By promotion	Technicians having three years of regular service in the grade
Sl. No.	Grade/ Name of Post	Method of recruitment	Field of selection and minimum qualifying service for promotion
1	2	3	4
6	Technician	(i) 80% By Direct recruitment of candidates possessing educational qualification of matriculation and two year diploma in electronics/telecommunication (ii) 20% by promotion from Helpers' cadre	Helpers having 11 years regular service in the grade and who have passed the Departmental Competitive Examination with at least 50% marks in each subject
7	Helper(Re-designated cadre of Helper and Khalasi after merger)	100% - By Direct Recruitment of candidates having passed 8 th standard and possessing working knowledge of electrical and mechanical machines	

The organization has already declared the cadres of Diesel Technician, Mast Technician and Diesel Engine Driver as 'dying cadre' and hence the details of the method of their recruitment have not been shown in the above table

Proposed Sanctioned Strength , Method of recruitment, field of promotion and minimum qualifying service in the subordinate engineering cadres for recruitment/promotion to the Subordinate Engineering Cadres of All India Radio & Doordarshan after cadre restructuring:

Sl. No.	Grade/ Name of Post	Method of recruitment	Field of selection and minimum qualifying service for promotion
1	2	3	4
1	Senior Time Scale of I.B.(E).S. [Rs 15600-39100 in PB-3 with Grade Pay of Rs 6600] Proposed Strength: 381	(i)33.3% By promotion (ii) 33.3% by promotion (ii) 33.3% by promotion	Assistant Engineers of the All India Radio / Doordarshan (excluding those in Civil Construction Wing) with 5 years regular service in the grade and possessing Degree in Engineering. Assistant Engineers of the All India Radio / Doordarshan (excluding those in Civil Construction Wing) with 6 years regular service in the grade and possessing Diploma in Engineering/ Degree of BSc JTS level officers having 4 years of regular service in the grade
2	Broadcast Executive [Rs 9300-34800 in PB-2 with Grade Pay of Rs 5400] Proposed Strength:4239	By promotion	Broadcast Engineer having three year regular service in the grade
3	Broadcast Engineer [Rs 9300-34800 in PB-2 with Grade Pay of Rs 4800] Proposed Strength:6765	(i)50% by Direct Recruitment of fresh engineering graduates (ii)10% by promotion through Departmental Qualifying Examination (iii)40% by	Junior Broadcast Engineer having three years regular service in the grade Junior Broadcast Engineer having six

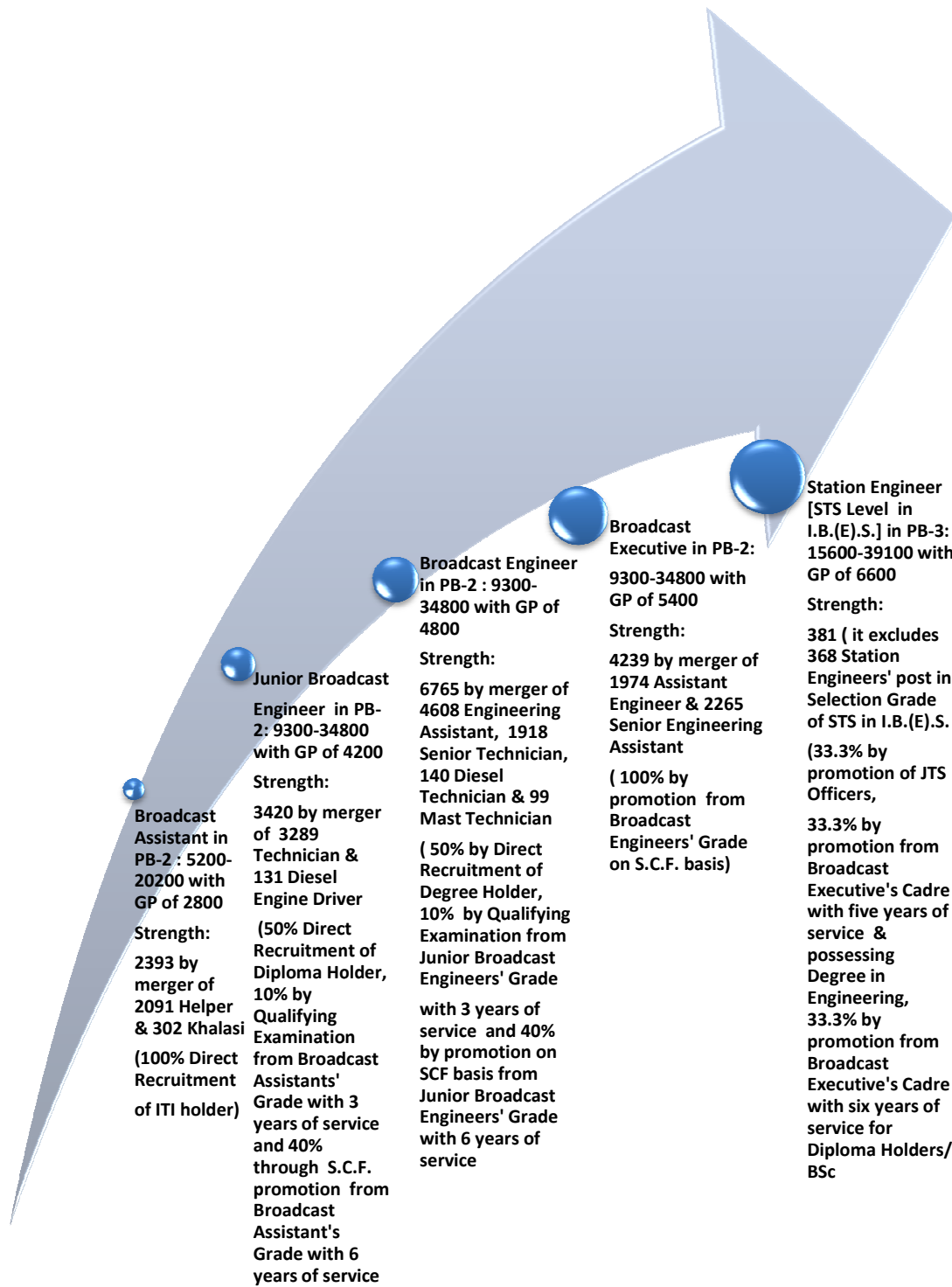
		promotion through seniority-cum-fitness	years regular service in the grade
Sl. No.	Grade/ Name of Post	Method of recruitment	Field of selection and minimum qualifying service for promotion
1	2	3	4
4	Junior Broadcast Engineer [Rs 9300-34800 in PB2 with Grade Pay of Rs 4200] Proposed Strength:3420	(i) 50% by Direct Recruitment of fresh three year Diploma Holder (ii) 10% by promotion through Departmental Qualifying Examination (iii) 40% by promotion through seniority-cum-fitness	Broadcast Assistant having three years regular service in the grade Junior Broadcast Engineer having six years of regular service in the grade
5	Broadcast Assistant [Rs 5200-20200 in PB-1 with Grade pay of Rs 2800] Proposed Strength:2393	100% Direct Recruitment of fresh two year diploma holder in electronics/telecommunication	

The re-organization and restructuring of the engineering cadres of AIR and Doordarshan, from Helper to E-in-C, has been jointly proposed by the Association of Radio & TV Engineering Employees, All India Radio & Doordarshan Technical Employees Association, All India Radio & Doordarshan Engineers Association and Akhil Bhartiya Akashvani Group "D" Karmachari Sangh.

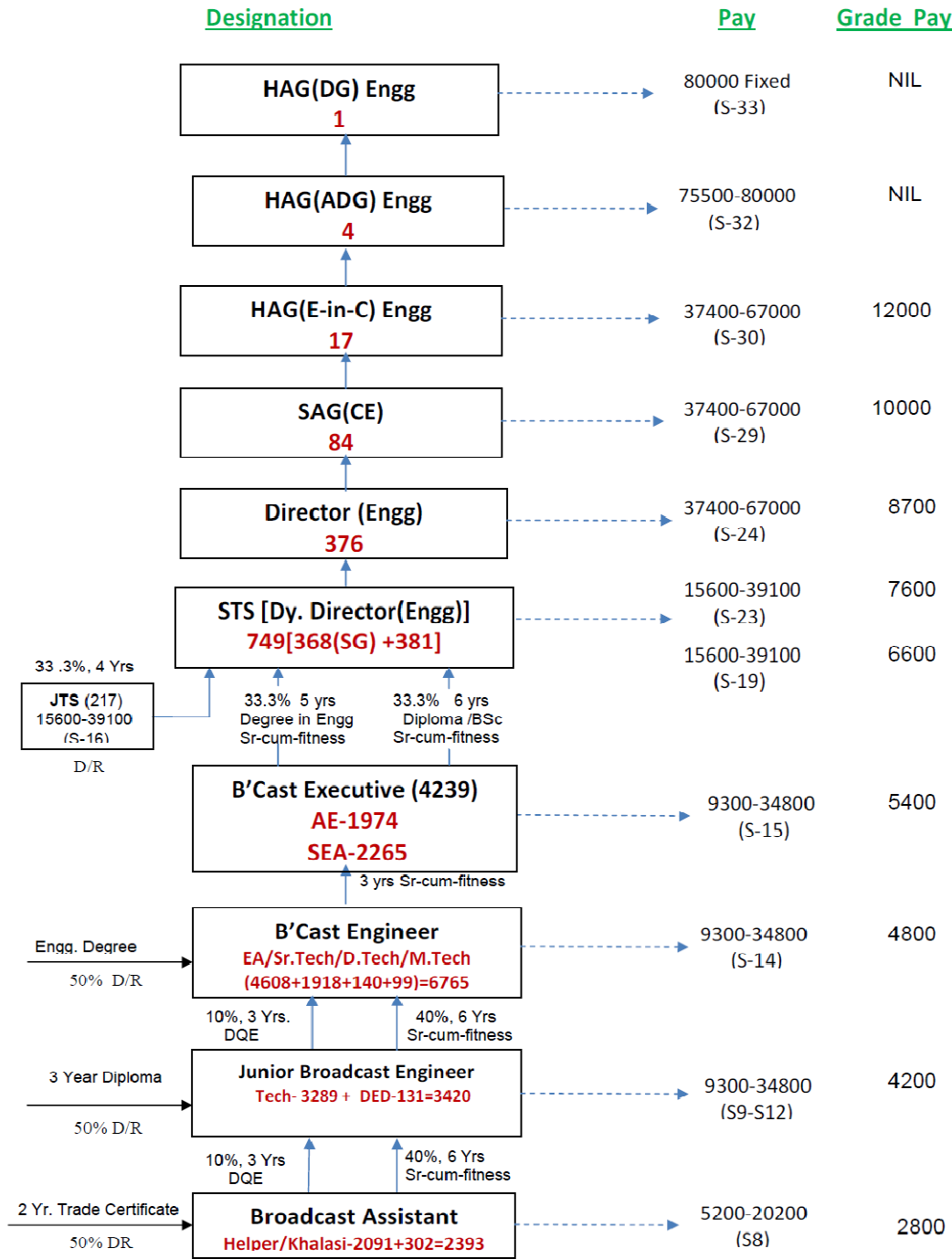
There is an urgent need to make the career prospects of direct recruits in AIR & Doordarshan attractive. A large number of directly recruited Engineering Assistants have been found to be not joining the organization after they are selected. Another disturbing fact is that a large percentage of these direct recruit Engineering Assistants leave the organization after serving a short stint of service in AIR and Doordarshan stations. The Committee studied the market forces which are driving and controlling recruitment of ITI holders, Diploma holders and Degree holders and

after a lot of deliberations the Committee recommends an attractive package to attract the direct recruits as well as give relief to existing categories of staff already working in the organization.

Upward Career Progression of Subordinate Engineering Cadres after Restructuring



Integrated Cadre Restructuring of Group "A", "B", "C" & "D" Engineering Officers & Staff



Summary of Existing & Proposed Staff Strength in Subordinate Engg. Cadres

Existing Cadre	Existing Strength	Proposed Cadre	Proposed Strength
Assistant Engineer	1974	Broadcast Executive	4239
Senior Engineering Assistant	2265		
Engineering Assistant	4608	Broadcast Engineer	6765
Senior Technician	1918		
Diesel Technician	140		
Mast Technician	99		
Technician	3289	Junior Broadcast Engineer	3420
Diesel Engine Driver	131		
Helper	2091	Broadcast Assistant	2393
Khalasi	302		
Total	16817	Total	16817

In nutshell, the Committee has ensured that the total number of posts before and after restructuring remains the same. In view of the modified assured career progression scheme already circulated by the DOPT, the merger and up-gradation of certain posts shall very substantially reduce any additional financial liability on account of restructuring.

Broadening of vision

In the context of need for developing rounded personality of the individual particularly through gaining experience by working in different working environment, it is very essential that AIR & Doordarshan officers and staff get sufficient exposure and working skills which will broaden their vision. Such an exposure is as necessary as training or skill enhancement measures under human resource development

techniques. One of basic deficiency contributing to the negative attitude and approach of the employees and also resulting in unwillingness of employees to modernise their work atmosphere is lack of vision and lack of exposure to modern techniques and working environment in other autonomous and Govt. funded organizations and Departments of Govt. of India. The Committee strongly recommends to provide a window of opportunity to deserving employees to go on deputation for two to three years and acquire additional skills/experience particularly in the cadre of Broadcast Executives.

Training

New recruits must be given at least three months orientation training programme at STI(T) and other suitable places. The Committee recommends a well prepared regular periodical in-service and off campus training and developmental programme for various level of officers and staff for at least 50 hours in a year to each individual. The Organization should also upgrade its own training faculty in view of the digitalization of delivery platforms. The guest faculty should be given befitting remuneration at par with faculties of other renowned training institutions, in order to attract the very best.

Area Chief Engineers Offices

The primary objective of any broadcast organization is to run and maintain broadcasting centres so as to transmit signals of highest technical quality. Apart from an excellent content, a crisp and clear picture or audio is an essential requirement of a national public service broadcaster to keep the listeners/viewers satisfied with the audio/video quality. This requires a constant monitoring of the technical quality of the radiated programme as well as regular inspection of the transmitting stations, studios, satellite and terrestrial links, etc. However the size and complexities of the technical installations of AIR and Doordarshan is too big to allow the monitoring and inspection of broadcasting centres to be undertaken by a few inspecting officers deployed in the five Zonal Chief Engineers' offices. The Cadre Review Committee recommends to introduce a new layer of Area chief Engineers. There shall be twenty two Area Chief Engineers, spread in the five Zones. Area Chief Engineers shall be in-charge of all operational & maintenance related matters of AIR & DD stations of

the designated areas at forty locations. The Area Chief Engineers shall effectively monitor and inspect the AIR and Doordarshan stations for ensuring optimum performance of transmitters, studios, satellite and terrestrial links, OB coverage, etc in their zones. They shall formulate maintenance strategies to minimize the breakdowns and tackle the emergencies. The Area Chief Engineers shall be assisted by Directors, Dy. Directors, Assistant Directors/ Broadcast Executives and other subordinate engineering cadres. The Area Chief Engineers' headquarters shall be located as under:

North Zone: Delhi, Jalandhar, Shimla, Lucnow, Srinagar, Jaipur & Dehradun

South Zone : Chennai, Hyderabad, Thiruwanaathapuram & Bangalore

East Zone: Kolkata, Patna, Ranchi & Bhubaneswar,

West Zone: Mumbai, Bhopal, Raipur, Ahmedabad &, Panaji,

North East Zone: Guwahati & Itanagar

AREA CHIEF ENGINEERS

1. Srinagar
2. Jalandhar
3. Shimla
4. Dehradun
5. Lucknow
6. Delhi
7. Jaipur
8. Ahmedabad
9. Bhopal
10. Raipur
11. Patna
12. Ranchi
13. Kolkata
14. Guwahati
15. Itanagar
16. Mumbai
17. Panaji
18. Bhubaneswar
19. Hyderabad
20. Chennai
21. Trivandrum
22. Bangalore



Area Chief Engineers shall be in-charge of all operational & maintenance related matters of AIR & DD stations of the designated areas at twenty two locations. Area Chief Engineers' team shall be carrying out study of feedback received from the AIR/DD stations about the working of AIR/DD Transmitters, studios, Earth Stations, microwave & optical fibre links, DSNG & mobile DSNG, RN receive terminals, A/C Plants, Diesel Generators, etc. It shall provide assistance in carrying out field strength measurements and maintenance inspection of AIR/DD stations. It shall also provide the necessary support to AIR/DD stations in case of prolonged breakdowns.

Duties & Responsibilities of the Engineering Cadres in All India Radio before cadre Restructuring

Duties & Responsibilities of Assistant Engineer

AIR Manual defines the duties and responsibilities of Assistant Engineer as detailed below:

- i) Shift –in-charge at transmitters and major studio centres
- ii) In-charge of recording, dubbing and OB activities at Regional and feeder centres and centres for transcription service
- iii) To work as Server Administrator
- iv) Supervision of server based recordings in Digital domain
- v) Supervision of the operation and maintenance of all the servers and workstations including software and hardware used for digital broadcasting in News Services Division of All India Radio.
- vi) In-charge of aerials and feeder line maintenance at SW centres having at least 2 short wave transmitters
- vii) Maintenance, installation, Engineering Administration and other technical responsibilities at stations/office of All India Radio as may be assigned to him/her
- viii) Responsible for the maintenance and servicing of defective equipments in various areas.
- ix) Responsible for the proper installation of new equipments systems/technical facilities at the Station/ Transmitter.

- x) Responsible for the procurement of engineering stores and management/Control of inventory at the Station/Transmitter.

Duties & Responsibilities of Senior Engineering Assistant

The following duties and responsibilities have been specified for the SEA's cadre in the AIR Manual.

- i) Shift-in-charge at Control Rooms, handling up to three simultaneous transmission channels
- ii) Recording, dubbing and OB activities; operation & maintenance of equipments
- iii) To work as Server Administrator
- iv) Technical support to the server based recordings and editing in Digital domain
- v) Operation and maintenance of all the servers and workstations including software and hard ware using for digital broadcasting in audio programmes.
- vi) Operation and maintenance of all the servers and workstations including software and hard ware using for digital broadcasting in News Services Division of All India Radio.
- vii) Technical support for the preparation of News, including news bites and broadcasting of news in Digital format through hard disc based system.
- viii) Operation and maintenance of Master Switching Room (MSR) routing different studios to different transmission lines including Satellite Linking through server based system within the studio complex.
- ix) Operation and maintenance of Microwave Link and Studio Transmitter Link linking various programme signals between studio complex and Transmitter complex.
- x) Operation and maintenance of Captive Earth station for up linking and receiving different programme through analogue as well as digital system.
- xi) Maintaining of All India Radio website and maintenance of servers related to the website.
- xii) Live interactive Internet system on the occasions of Natural calamities and National Calamities.

- xiii) Recording, Editing, Encoding and Uploading of audio programmes, text news and other programmes like notifications, tender notices etc using different types of software.
- xiv) Transmission Duties at Master Switching Room
- xv) Shift-in-charge at each medium power transmitter or a group of low power transmitters at a single location and shift duties at High Power Transmitters
- xvi) Assisting Senior Staff in maintenance, installation Engineering administration and other technical activities as may be assigned to him/her

Duties & Responsibilities of Engineering Assistant

The following duties and responsibilities of EA's cadre have been specified for the cadres in the AIR Manual.

- i. Transmission duties at Studios, Transmitting Centres and Captive Earth Station
- ii. Recording, Dubbing and OB activities
- iii. Server based recordings and editing in Digital domain.
- iv. Operation and maintenance of all the servers and workstations including software and hard ware used for digital broadcasting in audio programmes.
- v. Maintenance of All India Radio website and maintenance of servers related to the website.
- vi. Operation of live interactive Internet system in national calamities.
- vii. Recording, Editing, Encoding and Uploading of audio programmes, text, news and other programmes like notifications, tender notices etc using different types of software in Internet.
- viii. Outside Broadcast operations
- ix. S.W. Aerial operations at High Power Transmitters
- x. Maintenance of A/c plants, DG sets, Antenna Tuning Unit, electrical installations including switch gear room and other broadcasting equipments at studio and transmitter.
- xi. Assisting Senior Staff in maintenance and installation work and other technical activities as may be assigned to him/her

Duties & Responsibilities of Senior Technician

- i. Placing microphones in the studio and connecting them to the audio-console via microphone cables; Operating the mike fitted in the studio; helping engineer in the testing of microphones, headphones, inter-communication systems, tape recorders, turn table etc., Checking and maintaining all the tools provided in production control room and, keeping their record.
- ii. Checking emergency light system.
- iii. Assisting engineers in the maintenance of audio equipments.
- iv. Assisting Engineers-on-duty in operation and maintenance of transmitter equipments in Transmitter complex.
- v. Operation and Maintenance of A/c plants, DG sets, Antenna Tuning Unit, electrical installations including switch gear room and other broadcasting equipments at studio and transmitter.
- vi. Attending minor faults during the shift in studio as well as transmitter complex.
- vii. To assist the senior engineering staff in repair and maintenance of server based equipments and computers in studio and transmitter complex.
- viii. EA is expected to handle particularly complex, jobs at the discretion of his superior officers.

Duties & Responsibilities of Technicians

The duties and responsibilities specified for the cadres are as below:

- i To assist the operational staff at Transmitters, Studio, Captive earth Station and outside Broadcast etc. for maintaining the continuity of service.
- ii To assist in aerial selection, stub changing, reversals of beams etc. in the aerial field and manning and operating feeder-switching structures etc.
- iii To operate and run stand by/power supply units
- iv To assist the engineering staff in repair and maintenance of equipments
- v To assist in special maintenance and test of aerials, feeder lines, air conditioning plants, tape recorders, stand-by equipments, stand-by power supply arrangements and other ancillary plants and equipment.

- vi To check-up and maintain the fire fighting appliances tools and batteries, clock circuits, torches and lamps etc. at regular intervals
- vii To check monitoring circuits, intercom circuits and emergency lighting arrangements and report any fault
- viii To check tools and keep them in good working order after necessary repair
- ix To assist in carrying out minor installation works at stations
- x To assist in carrying out installation and testing of transformers, studio, receiving centres, aerials, feeder sub-station equipments, air conditioning plants. Diesel/Petrol generating sets and other associated works including cabling and wiring
- xi To assist in periodical changing or oil in oil filled components and in testing the oil
- xii To assist in checking of engineering stores
- xiii To perform such work as may be assigned by superior officers in the interest of service.

Duties & Responsibilities of Mast Technician

As per AIR manual the duties and responsibilities are:

- i. To work on installations up to a high of 150 feet.
- ii. To check, repair and paint masts or other structures upto a height of 1000 feet.
- iii. To assist Engineering Staff in aerial matching and associated measurements.
- iv. Installation and maintenance of guys, aerials, feeders, feeder poles, obstruction lights, cables etc.
- v. To check up correctness and quality of mast work done by contractors.
- vi. To replace or repair mast lights
- vii. Any other item or work relating to masts and feeders

Duties & Responsibilities of Diesel Technician

Diesel Technicians perform the preventive maintenance of diesel engines, applying their expertise and knowledge.

Duties & Responsibilities of Diesel Engine Driver

The Diesel Engine Drivers' duties and responsibilities, as per AIR manual, are:

- i. Operation of diesel power plants
- ii. Carrying out schedule of preventive maintenance of diesel plants and associated accessories (AIR Manual)

Duties & Responsibilities of Helper

The various works a Helper actually performs include:

- i. Helping in the arrangement of tools of work bench
- ii. Providing all sort of technical help to technician in the various works at Studios Transmitters etc.
- iii. Providing help in the transportation/movement of equipment
- iv. Providing help in maintenance, cleaning of panels testing etc. in AIR & TV Centres.

Duties & Responsibilities of Subordinate engineering Cadres in Doordarshan: Old System

Duties & Responsibilities of Assistant Engineer

Assistant Engineer is primarily responsible for the smooth and efficient operation and maintenance of various equipment – systems/technical facilities; organization of recording/transmission shifts duty work with the help of junior staff members; management of engineering purchase/stores; and installation work at DDK/PGF/TVRC/TVMC in Doordarshan. This is in addition to any other work assigned by the superior engineering officers from time to time.

At Doordarshan Kendra (DDK) / Programme Generation Facility (PGF) / Programme Production Centre (PPC)

Assistant Engineer is in-charge of operations in various technical areas and his functions are as under:

- a. Technical Director : Responsible for studio's technical operations during production/transmission of programmes from the centre and during OBs.

- b. Transmitter Engineer : Ensures proper functioning of transmitter(s) and associated equipments.
- c. Master Switching Room Engineer : Responsible for proper routing of incoming and outgoing signals from and to various sources i.e. studios, VTR's, out stations in the network and foreign organization, as may be necessary.
- d. Microwave Engineer : Responsible for setting up of Microwave links at the studio and OB ends for receiving/sending TV Signals and Co-ordination with concerned agencies.
- e. Maintenance Engineer : Responsible for the maintenance and servicing of defective equipments in various areas.
- f. Installation Engineer : Responsible for the proper installation of new equipments systems/technical facilities at the Kendra.
- g. Stores/Purchase Engineer : Responsible for the procurement of engineering stores and management/Control of inventory at the Kendra.

The above responsibilities are described in details as below:

Technical Director

- (i) To be the link between the Producer of the programmes and the entire technical crew.
- (ii) Offer suggestions to the Producer of the programme on all engineering matters regarding recording/transmission of the programme from the studio.
- (iii) Attend Programme/transmission planning meetings and offer technical suggestions suitably.
- (iv) Scrutinize and implement with the help of technical-operations crew 2nd lighting plot, audio arrangements and other special technical requirements in the studios and at OB spots.
- (v) Coordinate exchange of signals and their timing between the production control room and other technical areas like VTR, MSR, Transmitter, OB spot etc.
- (vi) Check programme material like videotapes, audiotapes and films well in time for recordings/playbacks.

- (vii) Ensure proper operation of all the equipments in the studio chain viz, cameras, vision-mixer, audio-mixing desk, VTRs, inter-communication, signal distribution etc., and advise the Producers about any change of plans necessary due to technical considerations.
- (viii) Man end-control position and adjust the video signals for proper levels of the various parameters.
- (ix) Ensure proper coordination amongst all members of the technical, operations crew and arrange substitution of duties wherever necessary.
- (x) Maintain log of studio activities during transmission and recording for submissions to senior engineering officers.

Transmitter Engineer

- i. To be overall responsible for proper functioning of the transmitters and all other associated equipments.
- ii. Coordinate with studio and/or MSR for lining up of programme input equipment chains before each transmission.
- iii. Test the transmitters including stand-by arrangements like spare transmitter, diesel generators, air-conditioning units and spare exciter rack etc., prior to transmission.
- iv. To man the Control desk to continuously monitor the technical quality of the picture both at input and at output of the transmitter, and take necessary corrective measures in case of power failure/equipment failure.
- v. Ensure safety precautions in respect of high voltages, earthing, aviation obstruction lights and first aid kit etc.
- vi. Carry out periodic maintenance as per approved schedule including special work like value changes, test major spares, take performance measurements, and keep records of the same.
- vii. Carry out survey of the reception of signals in the service area including the field strength measurements at periodical intervals, as required.

MSR Engineer

- (i) Overall In charge of all activities in MSR for network switching.
- (ii) Ensure proper functioning of all switching, monitoring, inter-communication, and associated equipments including TVRO and DRS.
- (iii) Check the daily schedule of programme exchange and finalize routing plan. Incorporate changes in the schedule taking into account technical considerations.
- (iv) Coordinate with TD/MW engineer, transmitter engineer/OB engineer and checking technical quality of incoming programmes and ensure good reception of signals.
- (v) Periodically test BSNL/MTNL Microwave link circuits jointly with BSNL/MTNL staff.
 - a) Coordinate with satellite stations/OCS to confirm timings and availability of booked circuits; ensure technical quality in respect of standards and levels, routing of audio and video signals from foreign organization etc. Arrange audio conferencing between various centers in the network and with foreign organizations.

Duties & Responsibilities of Senior Engineering Assistant and Engineering Assistant

Senior Engineering Assistants perform the supervisory duties and function as in-charge in the absence of AE. Engineering Assistants primarily perform operational duties in various areas in the studio, captive Earth Station and Transmitters.

Both perform duties like vision mixing, camera control, lighting, audio, VTR transmitter, microwave links, field recording on VCR, Sync sound studio, receiver section, MSR, etc., and assist engineering officers in the maintenance and installation of equipments/technical facilities and in Stores work at Doordarshan Kendras/ TV Relay Centres. This is in addition to any other work assigned to them from time to time by senior engineering officers.

Their detailed duties are as under:

Vision Mixing:

- i. Attending planning meeting for programme recording/transmissions and suggest changes in camera script/cue-sheet necessitated due to technical considerations.
- ii. Studying the camera-script together with the programme production staff and plan technical interpretations of the aesthetic requirements of the programme, as determined by the Producer of the programme.
- iii. Studying the transmission cue sheet and planning the technical operations in coordination with audio-engineer, lighting-engineer, VTR & server engineer.
- iv. Checking vision – mixer input signals from all areas.
- v. Checking and aligning all monitors in the production control room of the studio for optimum matching.
- vi. Checking the operational performance of all the necessary functions of the vision mixer and remote controls for proper functioning.
- vii. Checking and adjusting the clock system.
- viii. Reporting on all minor/major faults to the Technical Director and assisting him in their rectifications.

Camera Control:

- i. Checking electrical and mechanical working of all the Cameras well in advance for proper operation of the dollies, pan and tilt head, view-finder, zoom and focus controls of the lens, the balance of the camera, and to make adjustments wherever necessary.
- ii. Checking all the controls of the Camera, main control panel and remote control panel for their normal operation including pedestal, etc.
- iii. Lining up all the cameras as per the prescribed procedure including white-balance, black-balance, registration etc., and effecting corrections wherever necessary.
- iv. Cross checking with the vision mixer the camera inputs to the switcher for proper levels.

- v. Checking and ensuring the efficient operation of camera producer-CCU/TD inter-communication system.
- vi. Checking the Camera picture quality, during blocking and rehearsal and suggesting changes to lighting engineer/producer in lighting plot to enhance the overall technical quality of the programme.
- vii. Following the Camera script for production during the rehearsals and Planning camera controlling sequence accordingly for subsequent implementation during recording/transmission.

Lighting:

- i. Attending planning meeting for recording/transmission and suggesting changes in camera angles/light Plan/cue sheet due to technical consideration for the overall improvement of programme quality.
- ii. Preparing lighting-plot in consultation with Technical Director/Producer, ensuring optimum technical quality & meeting the aesthetic requirements of programmes.
- iii. Briefing the supporting staff for proper implementation of the lighting plan in respect of physical locations and in consultation with audio-engineer to eliminate boom/microphone shadows.
- iv. Implementing physically the lighting plan ensuring prescribed precautions and effecting changes wherever necessary.
- v. Operating Lighting Control Panel during recording/transmission.
- vi. Continuously monitoring the technical quality of the picture from the Camera from the point of view of lighting and effecting corrections on the spot in close liaison with CCU Engineer.
- vii. Ensuring satisfactory operation of light fittings and power distribution system taking into account all electrical and mechanical safety precautions.
- viii. Attending to routine servicing and maintenance of lighting system.
- ix. Maintaining all records in respect of life of bulbs, fittings etc.

Audio:

- i. Attending planning meeting for productions and finalize audio arrangements to meet the requirements of the production, planning and

implementing the microphone placement plan for recordings/transmissions.

- ii. Planning and implementing audio effects for programme production in consultation with the programmer and TD.
- iii. Checking the audio console thoroughly for all its functions, including pre-listening, fold back and echo etc., checking all inputs signals for levels and quality and effecting necessary individual channel equalizations.
- iv. Checking the audiotapes for the duration and cue marks along with the programme Production staff.
- v. Attending planning meeting for transmission and suggesting changes wherever required on account of operational constraints.
- vi. Ensuring all the tapes, necessary for the transmission, are available in proper order of sequence, checking all the cuts, their durations and cue marks along with programme Production staff.
- vii. Ensuring that the audio signals to all the areas (VTR. TK. XTR. MSR. MW etc.) are available and checking their quality and levels before each recording and transmission.
- viii. Checking and adjusting the levels of inter-Communication links between the producer, studio and all other technical areas.
- ix. Checking and ensuring the satisfactory working of the studio loud-speaker and fold-back reservation systems.
- x. Manning the audio-console, tape-recorders, turntable during the recording and transmission and maintaining the individual and relative levels as per the requirements of the production or transmissions.

Non Linear Editing:

Operation and maintenance of equipments used for Non-Linear editing.

Digital satellite News Gathering (DSNG):

- i. Responsible for the uplinking of different OB signals from OB spot to the Studio centre in digital format.
- ii. Operation and maintenance of equipments using in DSNG

Captive Earth Station:

Responsible for the up linking and down linking of the signals from various channels of Doordarshan, operation and maintenance of equipments used for the up linking , down linking and monitoring of audio & video signals in the Earth station.

Master Switching Room:

- i. Testing of switching, monitoring, intercommunication and associated equipment in MSR including TVRO and DRS.
- ii. Attending along with MSR engineer the daily meeting to discuss the schedule of programme exchange and prepare a routine plan.
- iii. Checking technical quality of incoming and outgoing signals and setting the variable controls for a particular set up.
- iv. Checking and aligning monitors and audio monitoring system and adjusting levels.
- v. Manning of switching console and timely change over and continuous monitoring of incoming and outgoing signals.
- vi. Attending to faults and assisting MSR engineer in maintenance of equipment.
- vii. Checking to ensure proper operation of intercom links with other areas.

Electronic News Gathering (ENG):

- i. Testing and aligning the ENG gear along with the cameraman for satisfactory audio/ video operation of the unit.
- ii. Offering suggestions or assistance to the cameraman in respect of operation of camera viz-filter settings, video Level, white-balance, registration etc.
- iii. Operating the recorder during the recording at location and checking the recording for optimum quality.
- iv. Maintaining records of the performance of equipment at locations and report any manufacturing to senior officers at the base.
- v. Keep essential tools and attending to the minor faults at location.
- vi. Assisting the senior engineering officers in the maintenance of ENG equipment.

VTR / Server:

- i. Operating the VTR during the recording/playback/editing etc.
- ii. Previewing tapes for recording/transmission, playback along with programme production staff, checking and confirming the audio track to be used and briefing the audio engineer accordingly.
- iii. Operating the Servers – the hard disc based Recording /Play back system
- iv. Maintaining records of recording/Playback of tapes.
- v. Maintenance of VTRs/ servers
- vi. Ensuring proper functioning of intercom links with other areas.

Sync Sound Studio:

- i. Testing the sync sound transfer machine(s) tape recorders, audio-video monitors, turn tables, echo units, audio console and other associated equipment for satisfactory/operation.
- ii. Transferring the sound from 16 mm tape to ¼” audio tape or from ½” to ¼” audio tape for capsuling for a particular programme.
- iii. Attending to minor faults at the time of operation reporting Major faults to the T.D. or AE in-charge of the film Section.
- iv. Checking the projection system in the Studio and the associated remote control.
- v. Checking placement of microphone, testing and adjusting level and balancing for audio recordings and operation of audio console.
- vi. Checking functioning of film equipment in other areas like editing, processing and preview.

Microwave Link

- i. Assisting members of staff during the bench test, installation at the transmitting/receiving and lining up of the equipment.
- ii. Ensuring proper packaging and testing of the equipment before movement to and from OB spot and unpacking at the other end.
- iii. Manning the control units during transmission/reception.

- iv. Establishing the voice communication link between the transmitter/receiver.
- v. Assisting in routine measurement on MW chain for optimum performance.
- vi. Ensuring proper operation of intercom links with other areas.

Transmitter:

- i. Assisting the senior engineering officer, if available on duty, for the proper working of transmitting and associated equipments.
- ii. Periodical logging of meter readings.
- iii. Carrying out routine maintenance of transmitter and power supply equipments.
- iv. Constant monitoring of audio/video signals received from control-room/TVRO/DRS and demodulated signal of transmitter.
- v. Checking and maintaining the impress stores of the transmitter.
- vi. Checking the normal functioning of D.R.S./TVRO relay receivers where provided at the transmitter site for relay of programmes.
- vii. Ensuring proper functioning of intercommunication links with other areas.

Maintenance/Installation

Assisting the AE/ASE in-charge of maintenance/installation teams in the servicing of defective equipments in various areas and installation/commissioning of new equipment systems/technical facilities at the Kendra respectively.

Purchase/Stores

Assisting the officer-in-charge of the engineering stores in the checking/testing of equipments/spares, maintenance of records and preparations of various returns.

Duties & Responsibilities of Senior Technician/Technician

Senior Technician performs the operational duties and performs EA's duties in their absence. Senior technicians/technicians primarily assist engineers in the maintenance of equipment in various technical areas and in the operational activities of audio/lighting/ air conditioning / transmitter and other areas. This is in

addition to any other work assigned to them from time to time by superior engineering officers. The details of their duties are as under.

Audio Side

- i) Placing microphones in the studio and connecting them to the audio-console via microphone cables; Operating boom-mike fitted in the studio; helping audio-engineer in the testing of microphones, headphones, inter-communication systems, tape recorders, turn table etc., removing mikes, audio cables and other associated portable and loose audio equipment used for programme and keeping them in proper place after recording/transmission.
- ii) Checking and maintaining all the tools provided in production control room and, keeping their record.
- iii) Checking emergency light system.
- iv) Remaining present in Studio during recording/transmission for shifting the mikes and connectors and keeping in constant touch with audio-engineer via headset.
- v) Ensuring general cleanliness of equipment, decks, Consoles, glass-partitions, doors etc. in the technical- areas.
- vi) Assisting engineers in the maintenance of audio/PCR equipments.
- vii)** Checking and replenishing first-aid box material.

Lighting Side

- i. Testing of lighting system including moving light battens and essential studio lighting circuits wherever provided.
- ii. Positioning and adjusting light fixtures in the studio/OB location as per instructions from the engineers.
- iii. Operating lighting switchgear system.
- iv. Keeping a watch on the lighting system for any abnormality like blow outs, overheating of connectors, cables, fixtures and other before during and after the programme.
- v. Attending to faults like replacement of fuses, cables, connectors, bulbs, lenses etc. during recording transmission shifts.

- vi. Ensuring general upkeep of lighting fixtures and moving light batten-system for proper electrical and mechanical operation and taking all electrical and mechanical safety precautions.
- vii. Testing of intercom links between lighting control and switchgear rooms.
- viii. Checking tools, clock, first-aid kit, wherever provided, in lighting control room.

Transmitter Side

- i. Assisting engineers on duty in operation and maintenance of transmitter equipment.
- ii. Testing/checking clocks/emergency lights/first-aid kit provided in transmitter, checking power supply switchgears and electrical sub-station equipments for normal functioning under the guidance of engineer on duty.
- iii. Testing and operating the standby diesel generator(s).
- iv. Assisting the engineer in the installation/alignment of MW/TVRO/LDRS links.
- v. Attending to minor faults during the shift.
- vi. Operating air-conditioning plants and window type air-conditioners.

Air-Conditioning Side

- i) Operating A/C plants and window type air-conditioners.
- ii) Periodic logging meter readings in A/C room and temperature/humidity readings in different air-conditioned areas.
- iii) Keeping constant watch on A/C equipment in shift for normal functioning.
- iv) Routine checking of power supply switchgear provided in A/C Plant rooms.
- v) Carrying out maintenance of A/C Plants and window Type air-conditioners under the guidance of Engineers.
- vi) Attending to minor faults during the shift.

Digital Satellite News Gathering (DSNG):

Assisting the engineers for the up-linking of different OB signals from OB spot to the Studio centre in digital format. Assisting the senior officers in the operation and maintenance of equipments used in DSNG

Captive Earth Station:

Assisting the engineers for the up linking and down linking of the signals from various channels of Doordarshan. Assisting the engineers in the operation and maintenance of equipments used for the up linking , down linking and monitoring of audio & video signals in the Earth station.

Maintenance/Installation

Assisting the AE/ASE in charge of maintenance/installation teams in the servicing of defective equipments in various areas and installation/commissioning of new equipment systems/technical facilities at the Kendra respectively.

General Maintenance

- i) Assisting maintenance engineer in the maintenance of equipments in various technical areas.
- ii) Checking master/Slave Clocks in Coordination with various section.
- iii) Checking emergency lights and charging batteries provided in each section.
- iv) Checking house lights in various technical areas.
- v) Checking tools, portable test and measuring equipments and maintaining a record of their movements.
- vi) Checking technical pamphlets available in maintenance Section.
- vii) Supervising general cleaning of the floors in technical areas in association with the Helper/Khalasi.

Duties & Responsibilities of Mast Technician

Mast Technician is primarily required to work on transmitting masts/towers at the transmitting centres. His duties include the following in addition to any other work assigned by the superior engineering Officers from time to time.

- i) Attending to antenna-feeders, distribution transformers and other fixtures in the antenna system mounted on tower.
- ii) Replacing fused mast lights.
- iii) Repairing electrical fittings, cables on the mast.
- iv) Carrying out routine maintenance of electrical mechanical fixtures of the mast including mast lifts.
- v) Installing equipments and fixtures on the tower.
- vi) Carrying out maintenance and replacement of all necessary gear required for working on masts/towers.
- vii) Installation and testing of Parabolic dish antenna and equipments of the microwave links on tall structures/buildings for establishing Programme link between the OB spot and the center. Testing and operation of diesel generator(s) where not co-located with transmitter.
- viii) Checking/filling the water in water reservoir for fire hydrant and periodic checking of fire fighting facilities in the premises.

Duties & Responsibilities of Helper/Khalasi.

Helper/Khalasi primarily perform following duties, in additions to any other work assigned to them by their superiors from time to time:

- i. Helping SEA/EA/Sr. Technician/Technician in the maintenance of equipments.
- ii. Maintaining cleanliness of equipments and technical furniture in technical areas.
- iii. Shifting of equipment/furniture.
- iv. Helping technical operational staff in lighting, audio, air-conditioning equipment maintenance and installation work.
- v. Locking/opening of technical area in presence of the shift-incharge.

- vi. Working as Camera dollyman/cableman in studio/OB spots.
- vii. Laying Cables and providing other manual help in installation of MW links during OB/ENG Coverage's.

Duties & Responsibilities of the Subordinate Engineering Cadres in All India Radio & Doordarshan after Restructuring

Duties & Responsibilities of Broadcast Executive

- i. The main responsibilities of Broadcast Executive will be to organize and supervise all the activities relating to operation and maintenance of Transmitter, studios-complex, studio-transmitter links, captive earth stations, satellite downlinks and O.B. equipments. He will be the supervisor of the maintenance and operation team as well as one who will provide necessary back-up and technical support to his team to achieve the goals. He shall also provide assistance to proposed Area Chief Engineers' team in carrying out maintenance/inspection of AIR stations.
- ii. He will be Shift-in-Charge at high power transmitters(50 KW and above) or a group of high power transmitters and major studio centres at the Metro cities (Above Type IV studios).
- iii. In-charge of maintenance and operation of hardware and software for server/client based studio automation system for transmission /recording /editing /dubbing /transcription of programmes as well as news automation systems and to act as a system administrator for server/client based studio networking system. The responsibilities will also include operation and maintenance of Master Switching Room (MSR) routing different studios to different transmission lines including Satellite Linking through server based system within the studio complex.
- iv. Incharge of all activities in IT Section
- v. In charge of OB activities: supervision of operations regarding (a) receiving feeds at the control room through landline/leased line/ISDN line/satellite links (b) execution of live/event coverage at the O.B. spot(c) sending feeds on line/satellite channel (d) maintenance of equipments meant for O.B.

- coverage such as O.B. Mixers/Amplifiers, audio codecs, INMARSAT Terminals, mobile and fly-away digital satellite news gathering equipments including generators/A/C plants installed in the DSNG Vans
- vi. In charge of supervision of maintenance and operation of STL(microwave and digital line) /Satellite up links and down link equipment/other auxiliary equipments
 - vii. In-charge of maintenance team for transmitter and its sub-assemblies including feeder lines and aerials
 - viii. In charge of supervision of maintenance and operation of ancillary equipments such as A/C Plants, Diesel Generators, UPS, RN Dishes, etc
 - ix. In charge of trouble-shooting and servicing of Transmitter/ Studio/ STL/Satellite up links and down link equipment and/or other auxiliary equipments
 - x. In charge of testing and measurement teams at the Transmitter/Studios/ STL/ Satellite up link and down link equipments
 - xi. Installation and testing of new Transmitter/Studio/STL/Satellite uplink and downlink equipments
 - xii. Procurement of stores/spares for operation and maintenance of broadcast equipments and other auxiliary/ancillary items.
 - xiii. Engineering administration of the technical set-up
 - xiv. Supervision of maintenance and operation of Gyan vani FM Transmitters
 - xv. Supervision and maintenance of technical infrastructure rented out to private operators for generation of revenue
 - xvi. Liaison with the Civil/ Electrical wing for maintenance of buildings/approach roads/water tanks/staff quarters
 - xvii. Liaison with Electricity Boards and other agencies in connection with smooth running of the broadcast
 - xviii. Any other technical responsibilities at stations/office of All India Radio as may be assigned to him/her.

Duties & Responsibilities of Broadcast Engineer

To perform Transmission duties at Studios, Transmitting Centres and Captive earth station which will comprise of:

- i. Operation and maintenance of all audio equipments in the studios including microphones, transmission /recording/dubbing/switching consoles, tape decks/recorders, C.D. Players, hard disc based work stations, servers, routers, computer networking, upload of data on internet, wires and cables, phone-in-consoles, signaling systems, monitoring system, , clock system, emergency light system, O.B. equipments, audio codecs, digital news gathering equipments in the studios and other related electronic equipments
- ii. Operation and maintenance of hardware/software for computerized
- iii. Monitoring and control of the strength, clarity, and reliability of incoming and outgoing audio signals in the studios and providing necessary adjustments to maintain quality broadcast
- iv. Operation of Transmitter to ensure that R.F. emission takes place at full power and modulation with optimum figures of noise level, distortion and frequency response
- v. Preventive maintenance of Transmitter along with sub-assemblies and auxiliary equipments , aerial fields, R.F. feeder, antenna, antenna tuning unit, antenna/ feeder selector unit, etc and solving breakdowns in the Transmitter
- vi. Operation and maintenance of Captive Earth stations, microwave links , R.N. Receive Terminals, INMARSAT Terminal, etc
- vii. Operation and maintenance of A/C Plants, Diesel Generators, H.T./L.T. Switch Gear, UPS, etc
- viii. O.B. Coverage
- ix. Servicing of defective equipments and performing complex nature of jobs under the supervision of senior staff members
- x. Assisting Broadcast Executive and other senior staff in operation and maintenance of Studios, Transmitting Centres, Captive earth station, A/C Plants, Diesel Generator, and other related works
- xi. Assisting Broadcast Executive and other senior staff in installation works and other technical activities as may be assigned to him/her
- xii. Maintenance of Log Books and equipment records/ preparation of reports

- xiii. Keeping tool box ready for use
- xiv. Up-keep of first aid-box/safety belts/fire-fighting equipments
- xv. He will supervise all the mast /antenna works in Transmitters
- xvi. He will supervise all the Diesel Engine works in Transmitters/studio complex's/ Earth stations and O.B. Vans.

Duties & Responsibilities of Junior Broadcast Engineer

- i. Placing microphones in the studio and connecting them to the audio-console via microphone cables; Operating the mike fitted in the studio; helping engineer in the testing of microphones, headphones, inter-communication systems, tape recorders, turn table etc., Checking and maintaining all the tools provided in production control room and, keeping their record.
- ii. Checking emergency light system.
- iii. Assisting engineers in the maintenance of audio equipments.
- iv. Assisting Engineers-on-duty in operation and maintenance of transmitter equipments in Transmitter complex.
- v. Operation and Maintenance of A/c plants, DG sets, Antenna Tuning Unit, electrical installations including switch gear room and other broadcasting equipments at studio and transmitter.
- vi. Attending minor faults during the shift in studio as well as transmitter complex.
- vii. To assist the senior engineering staff in repair and maintenance of server based equipments and computers in studio and transmitter complex.
- viii. To handle particularly complex jobs at the discretion of his superior officers.
- ix. To assist the operational staff at Transmitters, Studio, Captive earth Station and outside Broadcast etc. for maintaining the continuity of service.
- x. To assist in aerial selection, stub changing, reversals of beams etc. in the aerial field and manning and operating feeder-switching structures etc.
- xi. To operate and run stand by/power supply units
- xii. To assist the engineering staff in repair and maintenance of equipments
- xiii. To assist in special maintenance and test of aerials, feeder lines, air conditioning plants, tape recorders, stand-by equipments, stand-by power supply arrangements and other ancillary plants and equipment.
- xiv. To check-up and maintain the fire fighting appliances tools and batteries, clock circuits, torches and lamps etc. at regular intervals

- xv. To check monitoring circuits, intercom circuits and emergency lighting arrangements and report any fault
- xvi. To check tools and keep them in good working order after necessary repair

Duties & Responsibilities of Junior Broadcast Engineer for Mast /antenna works in Transmitters:

- i To work on installations up to a high of 150 feet.
- ii To check, repair and paint masts or other structures upto a height of 1000 feet.
- iii To assist Engineering Staff in aerial matching and associate measurements.
- iv Installation and maintenance of guys, aerials, feeders, feeder poles, obstruction lights, cables etc.
- v To check up correctness and quality of mast work done by contractors.
- vi To replace or repair mast lights
- vii Any other item or work relating to masts and feeders

Duties & Responsibilities of Junior Broadcast Engineer for Diesel Generators in Transmitter, Studios,

- i. To undertake preventive maintenance of diesel generators by applying his expertise and knowledge in running and maintaining diesel generators and associated accessories.
- ii. To operate diesel power plants

Duties & Responsibilities of Broadcast Assistant

- i To help in the arrangement of tools of work bench
- ii To provide technical help to engineering staff in the various works at Studios Transmitters etc.
- iii To help in the transportation/movement of equipment
- iv To help in maintenance, cleaning of panels testing etc. in broadcast centres
- v To assist in carrying out minor installation works at stations
- vi To assist in carrying out installation and testing of transformers, studio, receiving centre, aerials, feeder sub-station equipments, air conditioning

- plants. Diesel/Petrol generating sets and other associated works including cabling and wiring
- vii To assist in periodical changing of oil in oil-filled components and in testing the oil
 - viii To assist in checking of engineering stores
To assist in Operation of diesel power plants
 - ix To assist in Carrying out schedule of preventive maintenance of diesel plants and associated accessories
 - x To assist engineering staff in carrying out Mast/antenna work in Transmitters.
 - xvii. To assist engineering staff in carrying out preventive maintenance of diesel engines in Transmitters/studio complex's/ Earth stations and O.B.Vans.
 - xviii. To perform such work as may be assigned by superior officers in the interest of service

Duties & Responsibilities of Restructured Subordinate Engineering Cadres in Doordarshan

Duties & Responsibilities of Broadcast Executive

Technical Director

- i. To act as the link between the Producer of the programmes and the entire technical crew.
- ii. To offer suggestions to the Producer of the programme on all engineering matters regarding recording/transmission of the programme from the studio.
- iii. To attend Programme/transmission planning meetings and offer technical suggestions suitably.
- iv. To scrutinize and implement with the help of technical-operations crew 2nd lighting plot, audio arrangements and other special technical requirements in the studios and at OB spots.

- v. To coordinate exchange of signals and their timing between the production control room and other technical areas like VTR, MSR, Transmitter, OB spot etc.
- vi. To check programme material like videotapes, audiotapes and films well in time for recordings/playbacks.
- vii. To ensure proper operation of all the equipments in the studio chain viz, cameras, vision-mixer, audio-mixing desk, VTRs, inter-communication, signal distribution etc., and advise the Producers about any change of plans necessary due to technical considerations.
- viii. To man end-control position and adjust the video signals for proper levels of the various parameters.
- ix. To ensure proper coordination amongst all members of the technical, operations crew and arrange substitution of duties wherever necessary.
- x. To maintain log of studio activities during transmission and recording for submissions to senior engineering officers.

On Line Director/Editor

- i. To attend planning meeting for programme recording/transmissions and suggest changes in camera script/cue-sheet necessitated due to technical considerations.
- ii. To study the camera-script together with the programme production staff and planning technical interpretations of the aesthetic requirements of the programme, as determined by the Producer of the programme.
- iii. To study the transmission cue sheet and planning the technical operations in coordination with audio-engineer, lighting-engineer, VTR & server engineer.
- iv. To check vision – mixer input signals from all areas.
- v. To check and align all monitors in the production control room of the studio for optimum matching.

- vi. To check the operational performance of all the necessary functions of the vision mixer and remote controls for proper functioning.
- vii. To check and adjusting the clock system.

Transmitter Engineer

- i. He will be Shift-in-Charge at high power transmitters(or a group of high power transmitters). He will be overall responsible for proper functioning of the transmitters and all other associated equipments.
- ii. He will be the overall In-charge of all LPT's as well as in-charge of Administrative and Technical activities including maintenance.
- iii. He will coordinate with studio and/or MSR for lining up of programme input equipment chains before each transmission.
- iv. He will test the transmitters including stand-by arrangements like spare transmitter, diesel generators, air-conditioning units and spare exciter rack etc., prior to transmission.
- v. He will man the Control desk to continuously monitor the technical quality of the picture both at input and at output of the transmitter, and take necessary corrective measures in case of power failure/equipment failure.
- vi. He will ensure safety precautions in respect of high voltages, earthing, aviation obstruction lights and first aid kit etc.
- vii. He will carry out periodic maintenance as per approved schedule including special work like value changes, test major spares, take performance measurements, and keep records of the same.
- viii. He will carry out survey of the reception of signals in the service area including the field strength measurements at periodical intervals, as required.

MSR Engineer

- i. Incharge of all activities in MSR for Networking Switching.
- ii. Ensure proper functioning of all switching, monitoring, inter-communication, and associated equipments including TVRO and DRS.

- iii. Check the daily schedule of programme exchange and finalize routing plan. Incorporate changes in the schedule taking into account technical considerations.
- iv. Coordinate with TD/MW engineer, transmitter engineer/OB engineer and checking technical quality of incoming programmes and incorporate additional circulatory wherever necessary.
- v. Periodically test BSNL/MTNL Microwave link circuits jointly with BSNL/MTNL staff.
- vi. Coordinate with satellite stations/OCS to confirm timings and availability of booked circuits; ensure technical quality in respect of standards and levels, routing of audio and video signals from foreign organization etc. Arrange audio & video conferencing between various centres in the network and with foreign organizations.

Captive Earth Station

- i)* In-charge of all activities in Captive Earth Station
- ii)* Responsible for the up linking and down linking of the signals from various channels of Doordarshan.
- iii)* Operation and maintenance of equipments used for the up linking , down linking and monitoring of audio & video signals in the Earth station.

Electronic News Gathering (ENG)

- i.* In-charge of all activities in Electronic News Gathering (ENG)
- ii.* In-charge of maintenance section
- iii.* execute and supervise the maintenance of all the equipments related to ENG Maintenance section.
- iv.* Liaison with higher officers and staff for the smooth functioning of previews in different locations.

- v. Upkeep and maintain the record of all related equipments of ENG Maintenance section.
- vi. Performance appraisal of sub ordinate engineering staff of ENG maintenance section.
- vii. Execute and supervise the PM ,V V I P and other national coverage, specially Prime Ministers' national & international meets/visits/conferences.

IT Section

- i. In-charge of all activities in IT Section
- ii. Maintenance of NLE,s
- iii. 3D Graphics, CG
- iv. Computer PC,s , and other equipments related to IT -maintenance section.
- v. Installation of NLE Suites and Preview setups with Laptop or PC in different location.
- vi. Perform the previews in Prasar Bharti Office in PTI Building, Doordarshan Directorate Office and when ever required in Ministry also.
- vii. In charge of maintenance section
- viii. Execute and supervise the maintenance of all the equipments related to IT Maintenance section
- ix. Liaison with higher officers and staff for the smooth functioning of previews in different locations.
- x. Upkeep and maintain the record of all related equipments of IT Maintenance section.
- xi. Performance appraisal of sub ordinate engineering staff of IT maintenance section
- xii. Supervise the new installation of NLE edit suites and prepared the monthly maintenance report and other related activity report of the section etc.

Doordarshan Archives

- (i) In-charge of all activities in doordarshan Archives
- (ii) In-charge of Archive maintenance section:
- (iii) Maintenance of all archiving equipments i.e VCR,s,(all format) AMPEX ,BCN m/c Dubbing suites, restoration equipments (Noise reduction and Digital restoration system), Media Asset management system, Tape cleaning m/cs. Linear and non linear editing systems with software base restoration system, Tape library metadata management system and other equipments related to Archive maintenance section. Installation of Dubbing Suites and Preview setups.
- (iv) Upkeep and maintain the record of all the related equipments of Archive maintenance section.
- (v) Performance appraisal of sub ordinate engineering staff of Archive maintenance section and supervise the new installation of archiving equipments and give the technical certificate of archiving materials and prepared the monthly maintenance report and other related activity report of the section etc.

VTR Section

- (i) In charge of all activities in VTR Section including VTR maintenance section: Maintenance of VCR,s Edit Controllers, Video Monitors, Audio Consoles Ample speakers and other equipments related to VTR - maintenance section. Installation of Edit Suites and Preview setups in different location. Perform the previews in Prasar Bharti Office in PTI Building, Doordarshan Directorate Office and when ever required in Ministry also.
- (ii) Liaison with higher officers and staff for the smooth functioning of previews in different locations. Upkeep and maintain the record of all related equipments of VTR Maintenance section.
- (iii) Performance appraisal of sub ordinate engineering staff of VTR maintenance section and supervise the new installation of edit suites and prepared the monthly maintenance report and other related activity report of the section etc.

O.B./DSNG Vans

- i. Incharge of all activities in O.B./DSNG Vans
- ii. Supervision of operations regarding (a) receiving feeds at the control room through landline/leased line/ISDN line/satellite links (b) execution of live/event coverage at the O.B. spot(c) sending feeds on line/satellite channel (d) maintenance of equipments meant for O.B. coverage such as O.B. Mixers/Amplifiers, Camers, VTR's, Lighting Equipements and Microplones, digital satellite news gathering equipments including generators/A/C plants installed in the DSNG Vans.

Microwave Units

- I. Incharge of all activities in Microwave Units
- II. In charge of supervision of maintenance and operation of STL(microwave and digital OFC Links) /Satellite up links and down link equipment/other auxiliary equipments

Maintenance Engineer

- I. Responsible for the maintenance and servicing of defective equipments in various areas. I
- II. In-charge of maintenance and operation of hardware and software for server/client based studio automation system for transmission/Video recording/vodeo-editing/dubbing/transcription of programmes as well as news automation systems and to act as a system administrator for server/client based studio networking system .
- III. The responsibilities will also include operation and maintenance of Master Switching Room (MSR), routing different studios to different transmission lines including Satellite Linking through server based system within the studio complex.

As Installation Engineer

Responsible for the proper installation of new equipments systems/technical facilities at the Kendra.

As Stores/Purchase Engineer

Responsible for the procurement of engineering stores and management/Control of inventory at the Kendra.

Duties & Responsibilities in Area Chief Engineers' Offices

He shall also provide assistance to Area Chief Engineers' team in carrying out maintenance/inspection of DD stations.

Duties & Responsibilities of Broadcast Engineer

Broadcast Engineer shall primarily perform operational duties in various areas in the studio, captive Earth Station and Transmitters. He shall performing duties like vision mixing, camera control, lighting, audio, VTR transmitter, microwave links, field recording on VCR, Sync sound studio, receiver section, MSR, etc., and assist engineering officers in the maintenance and installation of equipments/technical facilities and in Stores work at Doordarshan Kendras/ TV Relay Centers. This is in addition to any other work assigned to them from time to time by senior engineering officers. Their detailed duties are as under:

Vision Mixing:

- i. Checking vision – mixer input signals from all areas.
- ii. Checking and aligning all monitors in the production control room of the studio for optimum matching.
- iii. Checking the operational performance of all the necessary functions of the vision mixer and remote controls for proper functioning.
- iv. Checking and adjusting the clock system.
- v. Reporting on all minor/major faults to the Technical Director and assisting him in their rectifications.

Camera Control

- i. Checking electrical and mechanical working of all the Cameras well in advance for proper operation of the dollies, pan and tilt head, view-finder, zoom and focus controls of the lens, the balance of the camera, and to make adjustments wherever necessary.
- ii. Checking all the controls of the Camera, main control panel and remote control panel for normal operation of this and pedestal etc.
- iii. Lining up all the cameras as per the prescribed procedure including white-balance, black-balance, registration etc., and effecting corrections wherever necessary.
- iv. Cross checking with the vision mixer the camera inputs to the switcher for proper levels.
- v. Checking and ensuring the efficient operation of camera producer-CCU/TD inter-communication system.
- vi. Checking the Camera picture quality, during blocking and rehearsal and suggesting changes to lighting engineer/producer in lighting plot to enhance the overall technical quality of the programme.
- vii. Following the Camera script for production during the rehearsals and Planning camera controlling sequence accordingly for subsequent implementation during recording/transmission.

Lighting:

- i. Attending planning meeting for recording/transmission and suggesting changes in camera angles/light Plan/cue sheet due to technical consideration for the overall improvement of programme quality.
- ii. Preparing lighting-plot in consultation with Technical Director/Producer, ensuring optimum technical quality & meeting the aesthetic requirements of programmes.
- iii. Briefing the supporting staff for proper implementation of the lighting plan in respect of physical locations and in consultation with audio-engineer to eliminate boom/microphone shadows.
- iv. Implementing, physically, the lighting plan ensuring prescribed precautions and effecting changes wherever necessary.
- v. Operating Lighting Control Panel during recording/transmission.

- vi. Continuously monitoring the technical quality of the picture from the Camera from the point of view of lighting and effecting corrections on the spot in close liaison with CCU Engineer.
- vii. Ensuring satisfactory operation of light fittings and power distribution system taking into account all electrical and mechanical safety precautions.
- viii. Attending to routine servicing and maintenance of lighting system.
- ix. Maintaining all records in respect of life of bulbs, fittings etc.

Audio:

- i. Attending planning meeting for productions and finalizing audio arrangements to meet the requirements of the production, planning and implementing the microphone placement plan for recordings/transmissions.
- ii. Planning and implementing audio effects for programme production in consultation with the programmer and TD.
- iii. Checking the audio console thoroughly for all its functions, including pre-listening, fold back and echo etc., checking all inputs signals for levels and quality and effecting necessary individual channel equalizations.
- iv. Checking the audiotapes for the duration and cue marks along with the programme Production staff.
- v. Attending planning meeting for transmission and suggesting changes found necessary on account of operational constraints.
- vi. Ensuring all the tapes necessary for the transmission are available in proper order of sequence, checking all the cuts, their durations and cue marks along with programme Production staff.
- vii. Ensuring that the audio signals to all the areas (VTR. TK. XTR. MSR. MW etc.) are available and checking their quality and levels before each recording and transmission.
- viii. Checking and adjusting the levels of inter-Communication links between the producer, studio and all other technical areas.
- ix. Checking and ensuring the satisfactory working of the studio loud-speaker and fold-back reservation systems.

- x. Manning the audio-console, tape-recorders, turntable during the recording and transmission and maintaining the individual and relative levels as per the requirements of the production or transmissions.

Non Linear Editing:

Operation and maintenance of equipments using for Non-Linear editing.

Digital satellite News Gathering (DSNG):

- i. Operation and maintenance of the up-linking of different OB signals from OB spot to the Studio centre in digital format.
- ii. Operation and maintenance of equipments used in DSNG

Captive Earth Station:

Operation and maintenance of equipments using for the up linking , down linking and monitoring of audio & video signals in the Earth station.

Master Switching Room:

- i. Testing of switching, monitoring, intercommunication and associated equipment in MSR including TVRO and DRS.
- ii. Attending along with Broadcast Executive the daily meeting to discuss the schedule of programme exchange and prepare a routine plan.
- iii. Checking technical quality of incoming and outgoing signals and setting and variable controls for a particular set up.
- iv. Checking and aligning monitors and audio monitoring system and adjusting levels.
- v. Manning of switching console and timely change over and continuous monitoring of incoming and outgoing signals.
- vi. Attending to faults and assisting MSR engineer in maintenance of equipment.
- vii. Checking to ensure proper operation of intercom links with other areas.

Electronic News Gathering (ENG):

- i. Testing and aligning the ENG gear along with the cameraman for satisfactory audio/ video operation of the unit.
- ii. Offering suggestions or assistance to the cameraman in respect of operation of camera viz-filter settings, video Level, white-balance, registration etc.
- iii. Operating the recorder during the recording at location and checking the recording for optimum quality.
- iv. Maintaining records of the performance of equipment at locations and report any manufacturing to senior officers at the base.
- v. Keep essential tools and attending to the minor faults at location.
- vi. Assisting the senior engineering officers in the maintenance of ENG equipment.

VTR / Server

- i. Operating the VTR during the recording/playback/editing etc.
- ii. Previewing tapes for recording/transmission, playback along with programme production staff, checking and confirming the audio track to be used and briefing the audio engineer accordingly.
- iii. Operating the Servers – the hard disc based Recording /Play back system
- iv. Maintaining records of recording/Playback of tapes.
- v. Maintenance of VTRs/ servers
- vi. Ensuring proper functioning of intercom links with other areas.

Archives-Maintenance section

- i. Assistance for the maintenance of archiving equipments and other equipments related to the archive maintenance section.
- ii. Checking the quality of the ingested material in media asset management system, dubbing and restoration audio and video.
- iii. Installation of dubbing suites, preview setups and any other work assigned

IT-Maintenance section

- i. Assistance for the maintenance of all computerized equipments and other equipments related to the IT maintenance section.
- ii. Performing previews in different location. Installation of NLE edit suites, preview setups and any other work assigned by the seniors

Sync Sound Studio:

- i. Testing the sync sound transfer machine(s) tape recorders, audio-video monitors, turn tables, echo units, audio console and other associated equipment for satisfactory/operation.
- ii. Transferring the sound from 16 mm tape to ¼" audio tape or from ½" to ¼" audio tape for capsuling for a particular programme.
- iii. Attending to minor faults at the time of operation reporting Major faults to the T.D. or AE in-charge of the film Section.
- iv. Checking the projection system in the Studio and the associated remote control.
- v. Checking placement of microphone, testing and adjusting level and balancing for audio recordings and operation of audio console.
- vi. Checking functioning of film equipment in other areas like editing, processing and preview.

Microwave Link

- i. Assisting members of staff during the bench test, installation at the transmitting/receiving and lining up of the equipment.
- ii. Ensuring proper packaging and testing of the equipment before movement to and from OB spot and unpacking at the other end.
- iii. Manning the control units during transmission/reception.
- iv. Establishing the voice communication link between the transmitter/receiver.

- v. Assisting in routine measurement on MW chain for optimum performance.
- vi. Ensuring proper operation of intercom links with other areas.

Transmitter

- i. Assisting the Broadcast Executive-on-duty for proper working of transmitting and associated equipments.
- ii. Periodical logging of meter readings.
- iii. Carrying out routine maintenance of transmitter and power supply equipments.
- iv. Constant monitoring of audio/video signals received from control-room/TVRO/DRS and demodulated signal of transmitter.
- v. Checking and maintaining the impress stores of the transmitter.
- vi. Checking the normal functioning of D.R.S./TVRO relay receivers where provided at the transmitter site for relay of programmes.
- vii. Ensuring proper functioning of intercommunication links with other areas.

Maintenance/Installation

Assisting the Broadcast Executive in-charge of maintenance/installation teams in the servicing of defective equipments in various areas and installation/commissioning of new equipment systems/technical facilities at the Kendra respectively.

Purchase/Stores

Assisting the Broadcast Executive of the engineering stores in the checking/testing of equipments/spares, maintenance of records and preparations of various returns.

Duties & Responsibilities of Junior Broadcast Engineer

Junior Broadcast Engineers shall perform the operational duties and functioning in the absence of Broadcast Engineer. Junior Broadcast Engineers *shall* primarily assist *Broadcast*

Engineer in the maintenance of equipment in various technical areas and in the operational activities of audio/lighting/ air conditioning / transmitter and other areas. This is in addition to any other work assigned to them from time to time by superior engineering officers. The details of their duties are as under.

Audio Side

- i. Placing microphones in the studio and connecting them to the audio-console via microphone cables; operating boom-mike fitted in the studio; helping audio-engineer in the testing of microphones, headphones, inter-communication systems, tape recorders, turn table etc., removing mikes, audio cables and other associated portable and loose audio equipment used for programme and keeping them in proper place after recording/transmission.
- ii. Checking and maintaining all the tools provided in production control room and, keeping their record.
- iii. Checking emergency light system.
- iv. Remaining present in Studio during recording/transmission for shifting the mikes and connectors and keeping in constant touch with audio-engineer via headset.
- v. Ensuring general cleanliness of equipment, decks, Consoles, glass-partitions, doors etc. in the technical-areas.
- vi. Assisting engineers in the maintenance of audio/PCR equipments.
- vii. Checking and replenishing first-aid box material.

Lighting Side

- i. Testing of lighting system including moving light battens and essential studio lighting
- ii. circuits wherever provided.
- iii. Positioning and adjusting light fixtures in the studio/OB location as per instructions from the engineers.
- iv. Operating lighting switchgear system.

- v. Keeping a watch on the lighting system for any abnormality like blow outs, overheating of connectors, cables, fixtures and other before during and after the programme.
- vi. Attending to faults like replacement of fuses, cables, connectors, bulbs, lenses etc. during recording transmission shifts.
- vii. Ensuring general upkeep of lighting fixtures and moving light batten-system for proper
- viii. electrical and mechanical operation and taking all electrical and mechanical safety precautions.
- ix. Testing of intercom links between lighting control and switchgear rooms.
- x. Checking tools, clock, first-aid kit, wherever provided, in lighting control room.

Transmitter Side

- i. Assisting Broadcast Engineers-on-duty in operation and maintenance of transmitter equipment.
- ii. Testing/checking clocks/emergency lights/first-aid kit provided in transmitter
- iii. Checking power supply switchgears and electrical sub-station equipments for normal functioning under the guidance of Broadcast Engineer on duty.
- iv. Testing and operating the standby diesel generator(s).
- v. Assisting the Broadcast Engineer in the installation/alignment of MW/TVRO/LDRS links.
- vi. Attending to minor faults during the shift.
- vii. Operating air-conditioning plants and window type air-conditioners.

Air-Conditioning Side

- i. Operating A/C plants and window type air-conditioners.
- ii. Periodic logging meter readings in A/C room and temperature/humidity readings in
- iii. different air-conditioned areas.

- iv. Keeping constant watch on A/C equipment in shift for normal functioning.
- v. Routine checking of power supply switchgear provided in A/C Plant rooms.
- vi. Carrying out maintenance of A/C Plants and window Type air-conditioners under the guidance of Engineers.
- vii. Attending to minor faults during the shift.

Digital Satellite News Gathering (DSNG):

Assisting the Broadcast Engineers for the up-linking of different OB signals from OB spot to the Studio centre in digital format.

Assisting the senior officers in the operation and maintenance of equipments using in DSNG

Captive Earth Station:

Assisting the engineers for the up linking and down linking of the signals from various channels of Doordarshan

Assisting the engineers in the operation and maintenance of equipments using for the up linking , down linking and monitoring of audio & video signals in the Earth station.

Maintenance/Installation

Assisting the Broadcast Engineers in charge of maintenance/installation teams in the servicing of effective equipments in various areas and installation/commissioning of new equipment systems/technical facilities at the Kendra respectively.

General Maintenance

- i. Assisting maintenance Engineer in the maintenance of equipments in various technical areas.
- ii. Checking master/Slave Clocks in Coordination with various section.
- iii. Checking emergency lights and charging batteries provided in each section.
- iv. Checking house lights in various technical areas.

- v. Checking tools, portable test and measuring equipments and maintaining a record of their movements.
- vi. Checking technical pamphlets available in maintenance Section.
- vii. Supervising general cleaning of the floors in technical areas in association with the Broadcast Assistant.
- viii. Broadcast Technician is required to work on transmitting masts/towers at the transmitting centres: His duties include the following works in addition to any other work assigned by the superior engineering Officers from time to time
- ix. Installation and testing of Parabolic dish antenna and equipments of the microwave links on tall structures/buildings for establishing Programme link between the OB spot and the centre.
- x. Testing and operation of diesel generator(s) where not co-located with transmitter
- xi. Repairing electrical fittings, cables on the mast
- xii. Attending to antenna-feeders, distribution transformers and other fixtures in the antenna system mounted on tower.
- xiii. Laying Cables and providing other manual help in installation of MW links during OB/ENG Coverage's.

Duties & Responsibilities of Broadcast Assistant

- i. Broadcast Assistants shall primarily perform following duties, in additions to any other work assigned to them by their superiors from time to time.
- ii. Helping Broadcast Executive/.Broadcast Engineer/Junior Broadcast Engineer in the maintenance of equipments.
- iii. Maintaining cleanliness of equipments and technical furniture in technical areas
- iv. Shifting of equipment/furniture.
- v. Helping technical operations staff in lighting, audio, air-conditioning equipment maintenance and installation work.
- vi. Locking/opening of technical area in presence of the shift-in-charge.
- vii. Working as Camera dolleyman /cableman in studio/OB spots.

- viii. Laying Cables and providing other manual help in installation of MW links during OB/ENG Coverage's.
- ix. Assisting in attending the antenna-feeders, distribution transformers and other fixtures in the antenna system mounted on tower.
- x. Replacing fused mast lights
- xi. Repairing electrical fittings, cables on the mast.
- xii. Carrying out routine maintenance of electrical mechanical fixtures of the mast including mast lifts.
- xiii. Installing equipments and fixtures on the tower.
- xiv. Assisting in Installation and testing of Parabolic dish antenna and equipments of the microwave links on tall structures/buildings for establishing Programme link between the OB spot and the centre.
- xv. Testing and operation of diesel generator(s) where not co-located with transmitter
- xvi. Checking/filling the water in water reservoir for fire hydrant and periodic checking of fire fighting facilities in the premises.