



भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
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Government of India - Ministry of Railways
Research, Designs & Standards Organization,
LUCKNOW - 226011



No. EL/3.1.28 (RTIS)

Dated: 15.07.2019

Principal Chief Electrical Engineer,

- i. Central Railway, Mumbai, CST-400 001.
- ii. East Central Railway, Hazipur-844101.
- iii. Eastern Railway, Fairlie Place, Kolkata -700001.
- iv. East Cost Railway, Chandrashekharpur, Bhubaneswar-751016.
- v. North Central Railway, Block-A, Subedarganj, Allahabad- 211033.
- vi. North Eastern Railway, GM Office, Gorakhpur- 273012
- vii. Northern Railway, Baroda House, New Delhi-110001.
- viii. South Central Railway, Secunderabad-500 071.
- ix. South East Central Railway, Bilaspur-495004.
- x. South Eastern Railway, Garden Reach, Kolkata-700043
- xi. West Central Railway, Jabalpur-482001.
- xii. Western Railway, Church gate, Mumbai-400 020.
- xiii. Southern Railway, Park Town, Chennai-600 003.

Sub: Minutes of Meeting at ELS/Ajni (AQ)/CR on 10th & 11th July'2019 regarding Real-time Train Information System (RTIS).

Ref: This office letter of even no. dated 20.06.2019.

Find enclosed herewith the copy of subject Minutes of Meeting for your information & further necessary action, please.

A. Pandey 15.07.19
(Arvind Pandey)

Encl: As above

for Director General Std. /Electrical

Copy to:

1. Secretary (Electrical), Railway Board, Rail Bhavan, New Delhi-110001
(**Kind Attn.: Shri A.K.Goswami, DEE/RSRB**)- for kind information please.
2. Director (Operations), Centre for Railway Information Systems, Chanakyapuri, New Delhi-110 021: (**Kind Attn.: Shri Manoj Akhouri**)- for kind information & necessary action please.
3. M/s Bharat Electronics Limited(A Govt. Of India Enterprise),Ministry of Defence, 405, Industrial Area, Phase-III, Panchkula- 134 113(Haryana)
(**Kind Attn.: Smt.Deepa Bajpai, Sr.DGM (D&E)**)- for kind information & necessary action please.

A. Pandey 15.07.19
(Arvind Pandey)

Encl: As above

for Director General Std. /Electrical

**Minutes of Meeting at Electric Loco Shed, Ajni on 10th & 11th July'2019
regarding Real-time Train Information System (RTIS)**

Members Present

RDSO(S/Shri)

OP Kesari, PEDSE
Arvind Pandey, Dy. Director
Girish Meena, SSE

CRIS(S/Shri/Smt.)

Manoj Akhouri, Director (Operations)
Raman Bansal, GM/CN
Ashish Arora, SPE/CN
Swapna Warikoo, SPE/CN
Anil Beelwal, SPE/CN

Railways(S/Shri/Smt.)

Somesh Kumar, DRM/NGP
Amit Gupta, Sr. DEE/ELS/AQ
Rahul, Dy. CPM/IT/NR
Sushma T., Dy. COM/FOIS/CR
Amandeep Gautam, DEE/TRS/BIA
Pawan Kumar Jayant, DEE/ELS/AQ
P. Bhargav, ADEE/ELS/BZA

**Bharat Electronics Limited (BEL) ,
Panchkula (S/Shri)**

Gurmeet Singh, DGM
Ramesh Kumar Chauhan, DGM
Sandeep Garg, Manager

& As per List Enclosed

A meeting was convened at ELS/AQ /CR on 10th & 11th July'2019 regarding implementation of RTIS on electric locomotives in line with RDSO letter no. EL/3.1.28 (RTIS) dated 20.06.2019. The summary of discussion & decisions taken during meeting is as under:

1. M/s CRIS made a presentation about RTIS functioning & its purpose to make Railway personnel aware of RTIS. M/s BEL made a presentation on Operation & Maintenance of RTIS
2. Railway representatives suggested various improvements to be taken up in RTIS Phase-2 (i.e. beyond 2700 locos for Phase-1) to make it more user friendly, reliable & fail safe.
 - It was suggested to provide a fuse along with MCB in RTIS power supply circuit to avoid the failure of locomotive owing to earth fault / short circuit owing to malfunctioning of MCB & in turn blowing off Addl. CCBA.
 - RTIS MCB shall not be near to MCB for Control Electronic as it is leading to inadvertent operation of same by LP/ALP causing loco failure. It should be provided near the Integrated Communication Module-ICM & PMU-Power Management Unit.
 - It was suggested that sharp bends in cable shall be avoided as it is causing excessive stress on connectors besides cracks on cable.

A. Kesari

Gurmeet
11/7/19

[Signature]

[Signature]
11/7

3. It was decided that CRIS will impart training to all the sheds about RTIS, starting from 1st week of August 2019. Further, it was decided that all the training schools on Indian Railways shall include one chapter on RTIS in the curriculum of training for LP/ALP.
4. It was decided that power supply to RTIS shall be tapped from following wires of locomotives to avoid draining of battery in case of loco is dead/not in operation:
 - In 3-phase loco: from wire no. 2095
 - In conventional loco: from wire no. + 003
5. M/s BEL stated that the earth fault problems were in initial 100 units wherein the PMU-Power Management Unit was of improper designs. The designs of PMU have been reviewed & problem of earth fault due to PMU has been rectified.
6. Considering the space constraints in loco cab, it was unanimously decided that existing indoor unit of RTIS (Display+ ICM+PMU) will be separated into 02 units in phase-2 of RTIS installation & size of display shall be reduced to 7".
7. The fitment location of RTIS in electric locomotives for phase -2 of RTIS installation was discussed. A team comprising of RDSO, CRIS, BEL & shed inspected the following locos for identifying the space/location for the fitment of RTIS having separate display, ICM & PMU units. Following location for fitment of RTIS in phase-2 was decided unanimously after inspecting WAP7 (37157), WAG9H (31227), WAG7 (27123 & 27815), WAG5 (23156) & WAP4 (22967).

Table-1

Type/Class of loco	RTIS location
WAP7	Cab1, on wall behind ALP Display unit will be facing the cab & ICM/PMU will be on the back side of the wall inside machine room
WAG9 WAG9H WAG9HC	Cab1, on wall behind LP. Display unit will be facing the cab & ICM/PMU will be on the backside of the wall inside machine room below Kabba keys.
WAG7	Cab1, behind ALP, at the top right hand side of Hand brake cubicle.
WAG5	Cab1, behind ALP, Display unit will be facing the cab & ICM/PMU will be on the back side of the wall inside machine room
WAP4	Cab1, behind ALP, Display unit will be facing the cab & ICM/PMU will be on the back side of the wall inside machine room

A. B. Dey

Sumit
11/7/19


[Signature]

11/7


The sketch for aforesaid location for fitment of RTIS device in phase-2 is enclosed for ready reference. It was decided the MCB & HRC/Glass fuse shall be provided near to ICM & PMU. Further, one spare fuse shall be kept on ICM/PMU. MCB (1A) along with HRC/Glass fuse (2A) shall be installed in the power supply circuit of RTIS device to avoid failure of loco due to malfunctioning of MCB. It was decided RTIS cables shall be laid in flexible conduits without any sharp bends.

8. It was decided that CRIS will prepare & submit a fitment drawing of RTIS which shall include the location of RTIS device, cable layout & power supply arrangement indicating the MCB & fuse to RDSO for formal approval for 3-phase & conventional electric locos. One prototype of RTIS indoor unit will be fitted in both 3-phase & conventional electric locos to verify the suitability of location & fitment drawing will be finalized accordingly before further fitment/proliferation of RTIS in phase-2.
9. It was decided unanimously that for RTIS phase-2, the ICM & PMU of RTIS device shall be designed for 70°C to make the RTIS indoor unit suitable for its installation in machine room.
10. It was decided that to expedite the installation of loco device for RTIS Phase-1, M/s BEL shall augment their installation teams in all 21 loco sheds to carry out at least 03 installations per day per loco shed. For this, each Loco shed shall allocate at least 03 locos per day and BEL to target minimum 30 installations per day.
11. CRIS will submit the Operation & Maintenance Instructions to RDSO. RDSO will issue the Operation & Maintenance Instructions to Railways in form of Technical Circular accordingly.
12. In the phase-1 of RTIS implementation, the RTIS loco device is covered with 01 year warranty support/AMC service post commissioning of the system. Zonal Railways suggested that a comprehensive warranty support / AMC of RTIS device be provided for a longer period.

A. B. Sanyal
RDSO 11.07.19


CRIS 11/7/19


BEL 11/7/19


ELS/AQ/CR 11/7

**Attendance Sheet for Real-time Train Information System (RTIS) meeting at
ELS/AQ Dt. 10.07.2019**

S.N.	Name of Deligates	Designation	Shed/Rly.	Mobile No.	Signature
1	D. SRIDHAR	Sr Instructor	BZA/SCR	7702773237	[Signature]
2	A. Srinivasa Krishna	Sr Instructor	BZA/SCR	7702773237	[Signature]
3	AMBUJ SHARMA	SSE	ELS/CNB	7525001055	[Signature]
4	RAMBABU A	SSE	FTS/BZA	7702773195	[Signature]
5	V. S. Bondle	SSE	ELS/AQ	9503012575	[Signature]
6	T. Ravi Shankar	SSE	EL/BZA	9500084211	[Signature]
7	CH. SUBBARAO	Tech-I	ELS/BZA	7661805006	[Signature]
8	Manish Sathate	SSE	ELS/BZL	9503011174	[Signature]
9	Jivan Patil	SSE	ELS/BSL	9503011160	[Signature]
10	P. Bhargava	ADEB	ELS/BZA	9901373311	[Signature]
11	AMAN DEEP GAUTAM	DEE/TRS/BIA	ELS/BIA	9152440953	[Signature]
12	C.B.K Singh	JE/ELS/BIA	ELS/BIA	8600527246	[Signature]
13	Mukesh Kr. Sahy	JEE	EL/BDA	8752618099	[Signature]
14	Satish Kumar	CLT	NGP/CR	9503012040	[Signature]
15	A.K. Saranya	CLC	NGP/CR	9503012029	[Signature]
16	MUKUND CHAUDHARY	SSE	TRD/WCR	9289763514	[Signature]
17	PRATEEK SAHU	SSE	ELS/NRT/WCR	9752418379	[Signature]
18	N.S Chaudhary	CLC	CSMT/CR	9004412340	[Signature]
19	DK Ram	JE	CSMT/CR	9004442592	[Signature]
20	ASHOK K. Meena	TECH	ELS/KYN	9667881276	[Signature]
21	Rajesh Singh	SSE	EL/BDA	9004442527	[Signature]
22	Nitesh Kumar Sahu	SSE	ELS/KYN	9424300361	[Signature]
23	Pavan Kumar Singh	SSE	ELS/BOL/WCR	9724099326	[Signature]
24	Deepak M. Bhapare	TE/FOIS	HQ/CR	9004442986	[Signature]
25	Shashikanth Varshney	SE/TE/FOIS	CRIS/NDU	9717638962	[Signature]
26	D. D. Agar	JE TRS/AQ	ELS/AQ	9423600180	[Signature]
27	D. C. Bhivgade	GSB/TRS/AQ	ELS/AQ	9503012554	[Signature]
28	H.R. Kamble	SSE/TRS/AQ	ELS/AQ	9503012540	[Signature]
29	Prayanka Tiwari	JE/ELS/AQ	ELS/AQ	9766846660	[Signature]
30	Madhuri Chauhan	SSE	ELS/AQ	9503012570	[Signature]
31	Dinshy Wankhede	Tech	ELS/AQ	9923215378	[Signature]
32	S.S. Nim	SSE	ELS/AQ	9503012549	[Signature]
33	Ajay Singh	CSE	ELS/AQ	9331015582	[Signature]
34	S.A. Jainwal	Sr. Tech.	ELS/AQ	9822233074	[Signature]
35	Ajay Srivastava	SSE/AQ	ELS/AQ	9503012555	[Signature]
36	RAHUL SINGH	JE/TS/PA	ELTS/PA	7219613363	[Signature]
37	M. Babu Rao	JE/LGD	ELS/LGD	9492047244	[Signature]
38	S.U. Rathod	SSE/AQ	ELS/AQ	9503012564	[Signature]
39	S.B. Balsant	TECH-I	ELS/AQ	9422504936	[Signature]
40	Raja Iyengar	Tech I	ELS/AQ	9421801204	[Signature]
41	Siddhanta	SS AQ	ELS/AQ	9766464404	[Signature]
42	Anil Beelwal	SPE/CN	CRIS	8130797625	[Signature]
43	Girish Munay	SSE/CN/CRIS	CRIS	9794862737	[Signature]
43	Ashish Arora	SPE/CN/CRIS	CRIS	9958996338	[Signature]
45	RAHUL	DYCPM/IT	NR	9717630916	[Signature]
46	SWAPNA WARIKOO	SPE/W/CRIS	CRIS/HQ	8130797536	[Signature]
47	Sushma T.	DYCOM/FOIS/CR	CR	8828110915	[Signature]
48	ARVIND PANDAY	Dy. Dir/Elec/RPSO/LKO		9794863370	[Signature]

ATTENDANCE SHEET FOR RTIS MEETING AT ELS/AQ DATED 10.07.2019

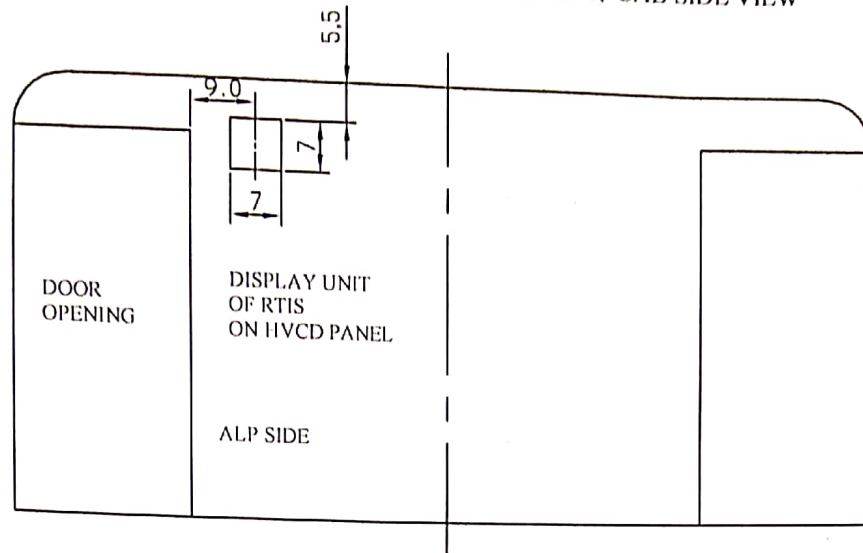
SN	NAME	Home shed	Designation	SIGNATURE
1	ANIL BEELWAL	CRIS	SPE	ANIL
2	VANDEEP GARG	BEL	Manager	Vandee
3	Gurmeet Singh	BEL	DGM	Gurmeet
4	Ramesh Ver. Chauhan	BEL	DGM	Ramesh
5	Rambabu Amirneri	FTS/BZA/SCR	SSE	Rambabu
6	A. Srinivas Krishna	ETTC/BZA/SCR	SS-Inst	A. Srinivas
7	D. SRINIVAR	ETTC/BZA/SCR	SS-Inst	D. Srinivas
8	3720 एलफोर्क	ELTC/USL/BSF	Inst	3720
9	S.f. Mathanikar	DD/BUR/CR	CLD/PA	S.f. Mathanikar
10	RAHUL SINGH	ELTS/PA/CR	J.E./PA	Rahul
11	M Babu Rao	ELS/LGD/SCR	JE/E2	M. Babu Rao
12	Raman Bausal	CRIS	Gm/cw	Raman
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**Attendance Sheet for Real-time Train Information System (RTIS) meeting at
ELS/AQ Dt. 11.07.2019**

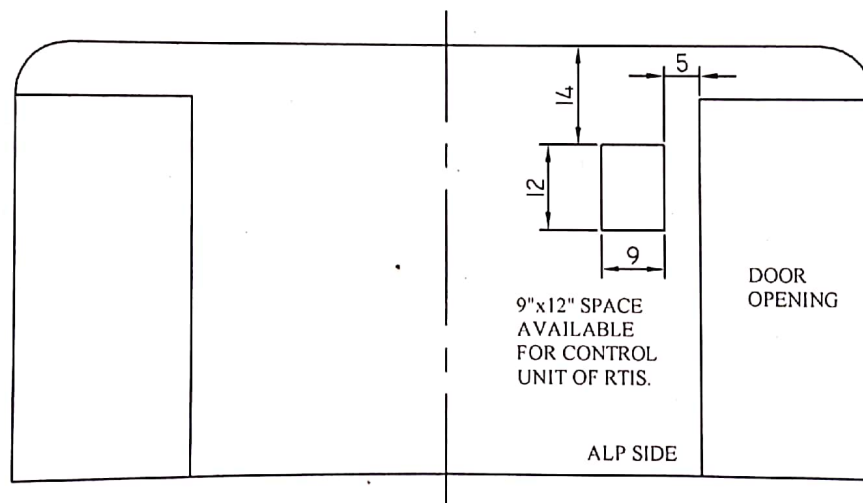
S.N.	Name of Deligates	Designation	Shed/Rly.	Mobile No.	Signature
1	S.R. Jaiswal	sr. Tech.	Avin	9822233024	<i>[Signature]</i>
2	A. Srinivasa Krishna	sr. Inst	ETTC/BZA	770277327	<i>[Signature]</i>
3	M. Babu Rao	JE	ELS/LGD/SCR	9492047441	<i>[Signature]</i>
4	T. Ravi Shankar	SSE	ELS/BZA	9500084211	<i>[Signature]</i>
5	Ch. Subba Rao	Tech	ELS/BZA	7661805006	<i>[Signature]</i>
6	AMBUJ SHARMA	SSE	ELS/CND	7525001655	<i>[Signature]</i>
7	R.N. Chale	Jr Instructor	2RTI/BSL	8668320277	<i>[Signature]</i>
8	M. P. Nikam	sr. Instruct	2RTI BSL	7387708812	<i>[Signature]</i>
9	S. S. Nim	SSE	ELS/AQ	9503012549	<i>[Signature]</i>
10	V. S. Bonde	SSE	ELS/AQ	9503012546	<i>[Signature]</i>
11	S. B. Balasarat	Tech-I	-11-	9422504936	<i>[Signature]</i>
12	Raj. Pyangar	Tech I	-11-	9421801204	<i>[Signature]</i>
13	Mrs M. Chauhan	SSE	L-11-	9503012570	<i>[Signature]</i>
14	A. P. Upadhye	SSE	ELS/AQ	9503012571	<i>[Signature]</i>
15	Manish Sathpute	SSE	ELS/BSL	9503011174	<i>[Signature]</i>
16	Ajay Singh	SSE	ELS/AQ	9503012572	<i>[Signature]</i>
17	Jivan Patil	SSE	ELS/BSL	9503011160	<i>[Signature]</i>
18	ATK. G. G. G. G.	Instructor	ETC/USL/BSP	9752442331	<i>[Signature]</i>
19	D. SRTDHAR	sr. Instruct	ETC/BZA/SCR	7702773237	<i>[Signature]</i>
20	D. K. RAY	JE	CMY T. Shed	9804442592	<i>[Signature]</i>
21	S. H. Nani	CU	NLP	9503012025	<i>[Signature]</i>
22	A. K. Saneen	CU	NLP	9503012029	<i>[Signature]</i>
23	S. P. Mathanikar	CLI	DD/SUR	9503014165	<i>[Signature]</i>
24	Shiv Kumar	CLI	NLP CR	9503012040	<i>[Signature]</i>
25	Rajesh Singh	SSE	KYN/CR	9004442527	<i>[Signature]</i>
26	D. C. Bhingade	SSE	AQ/CR	9503012554	<i>[Signature]</i>
27	Torpre. S. B.	SSE	AQ/CR	9730137217	<i>[Signature]</i>
28	Mukesh Bahar	JE	ELS/BZA	9826160944	<i>[Signature]</i>
29	CBK Singh	TE	ELS/BZA	8600529246	<i>[Signature]</i>
30	N. S. Chaudhary	CLI	CMY/CR	9004412340	<i>[Signature]</i>
31	Shashikanth Varshney	B. TI/FOIS	CRIC/NDLC	9712638962	<i>[Signature]</i>
32	Deepak M. Dhepar	TE/FOIS	HA/CR/CMY	9004442986	<i>[Signature]</i>
33	MUKUND CHAUDHARY	SSE	TKD/CR	9289768514	<i>[Signature]</i>
34	Pavan Kumar Singh	SSE	ELS/BZA/CR	9724099326	<i>[Signature]</i>
35	RAHUL SINGH	JE	ELTC/PA/CR	7219613363	<i>[Signature]</i>
36	Nitesh Kumar Sahu	SSE	ELS/KYN/CR	94124300361	<i>[Signature]</i>
37	PRATEEK SAHU	SSE	ELS/KYN/CR	9752418379	<i>[Signature]</i>
38	ASHOK KUMAR MEENI	Tech	ELS/KYN/CR	9667526276	<i>[Signature]</i>
39	SURAT BHATT	DEE/TEO	NLP	2219612306	<i>[Signature]</i>
40	P. Bhargava	ADEE/ELS/BZA	ELS/BZA	9701373311	<i>[Signature]</i>
41	AMAN DEEP GAUTAM	DEE/TRS/BIA	ELS/BIA	9152440953	<i>[Signature]</i>
42	Ratnesh K. Srivastava	ADEE/RS/CNB	ELS/CND	9794845005	<i>[Signature]</i>
43	RAMBABU A	SSE/FIS/BZA	FIS/BZA/CR	7702779125	<i>[Signature]</i>
43	Gurmeet Singh	DGM, BSL	BSL	9815213246	<i>[Signature]</i>
45	Sandeep Garg	MGR, BSL	BSL	9417148800	<i>[Signature]</i>
46	Anil Beeheri	SPE/CN	CRIC	8130792635	<i>[Signature]</i>
47	Ramogh B. Chandra	DGM	BSL	9417891026	<i>[Signature]</i>

S.N.	Name of Deligates	Designation	Shed/Rly.	Mobile No.	Signature
48	A. K. Grouver	ADGE AQ	AO/CR	7219612316	<i>[Signature]</i>
49	R. M. SRIVASTAVA	ADEEHRSIAQ	AO/CR	7219612315	<i>[Signature]</i>
50	RAHUL	DYCPM/IT	NR	9717630916	<i>[Signature]</i>
51	Sushma T.	Dy. Com/FA/CR	CR	232310915	<i>[Signature]</i>
52	SWAPNA WARINOO	SPE/W/CRIS	CRIS	8136797536	<i>[Signature]</i>
53	Ashish Arora	SPE/CN/CRIS	CRIS	9958996338	<i>[Signature]</i>
54	ARVIND PANDAY	Dy. Director	RDSO	9794863370	<i>[Signature]</i>
55	Umesh Meena	SSE/D/RDSO	RDSO	9794862737	<i>[Signature]</i>
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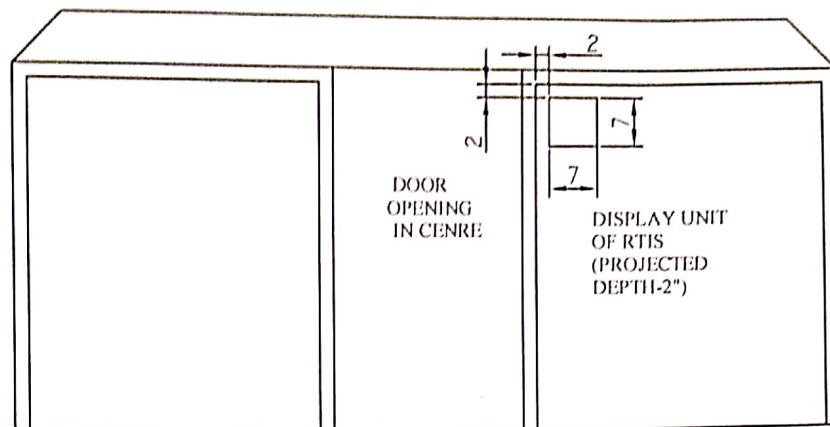
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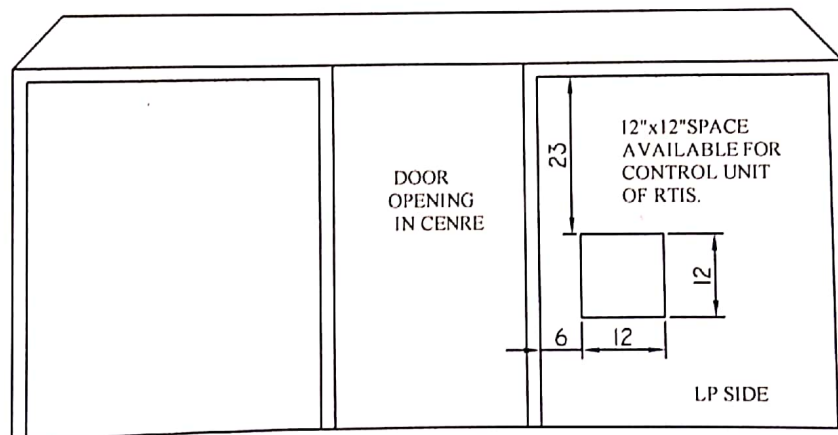
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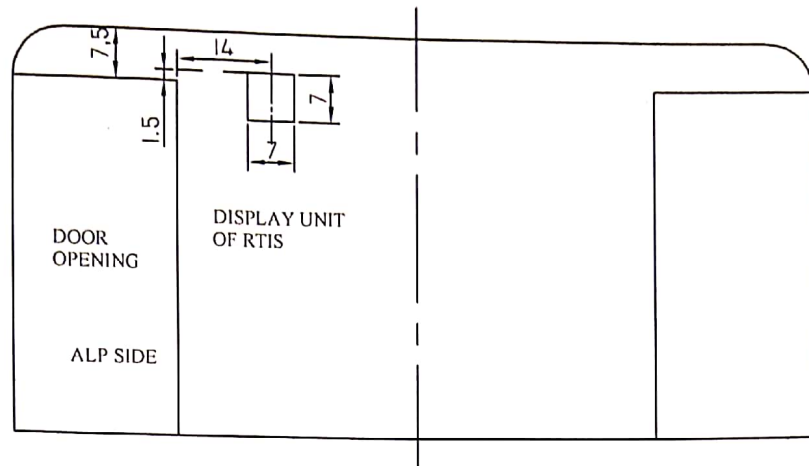
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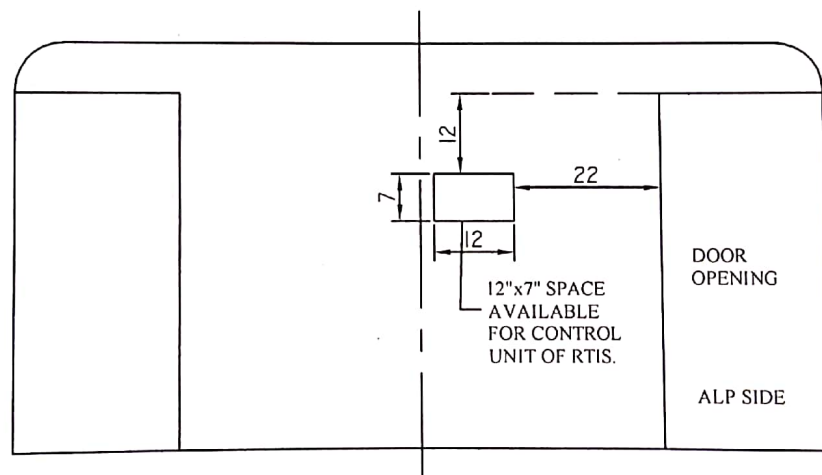
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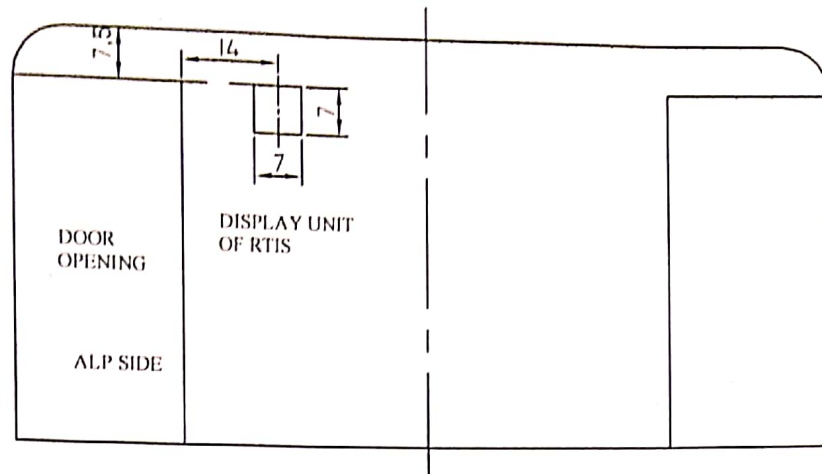
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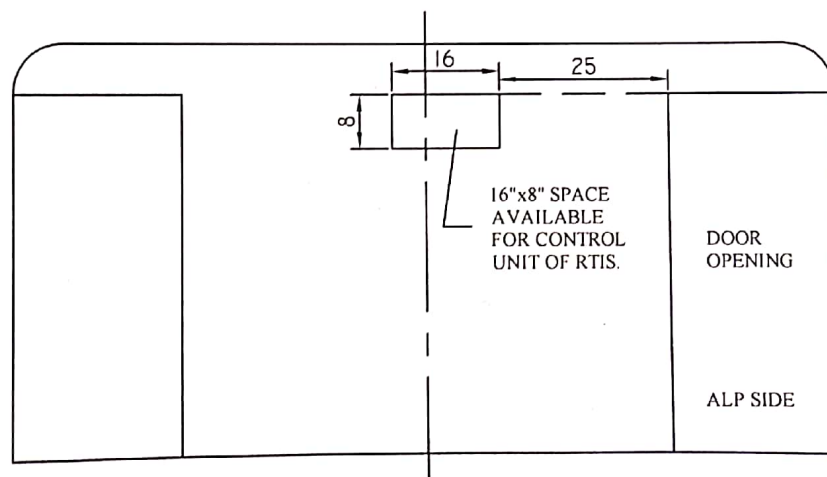
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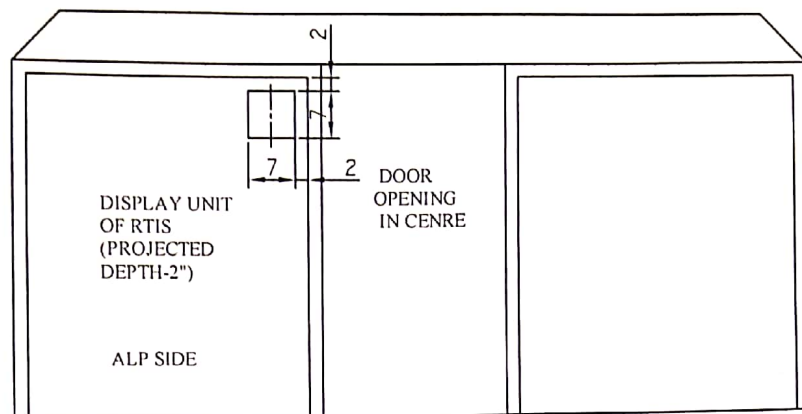
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LOCO TYPE : WAG-5P, LOCO NO: 23156, CAB-1, MACHINE ROOM SIDE VIEW



LOCO TYPE : WAP-7, LOCO NO :37157, CAB-1, CAB SIDE VIEW



LOCO TYPE : WAP-7, LOCO NO: 37157, CAB-1, MACHINE ROOM SIDE VIEW

