



THE REPUBLIC OF THE UNION OF MYANMAR  
MINISTRY OF TRANSPORT & COMMUNICATION



# MYANMA RAILWAYS

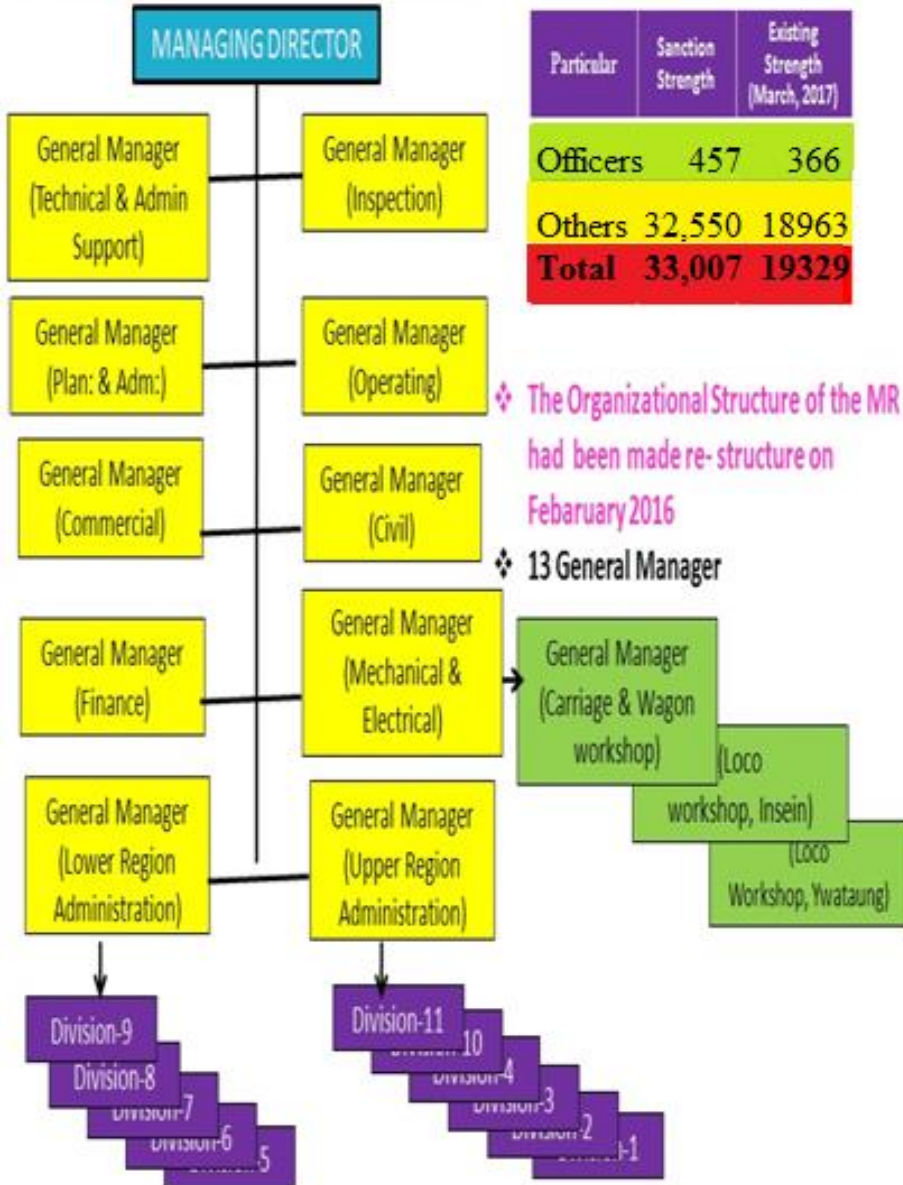
Existing Condition and Future  
Plan of Myanmar Railways



Myanma Railways

# Current Situation of Myanma Railways

## MYANMA RAILWAYS ORGANIZATION CHART



Particular	Sanction Strength	Existing Strength (March, 2017)
Officers	457	366
Others	32,550	18,963
<b>Total</b>	<b>33,007</b>	<b>19,329</b>

❖ The Organizational Structure of the MR had been made re-structure on February 2016

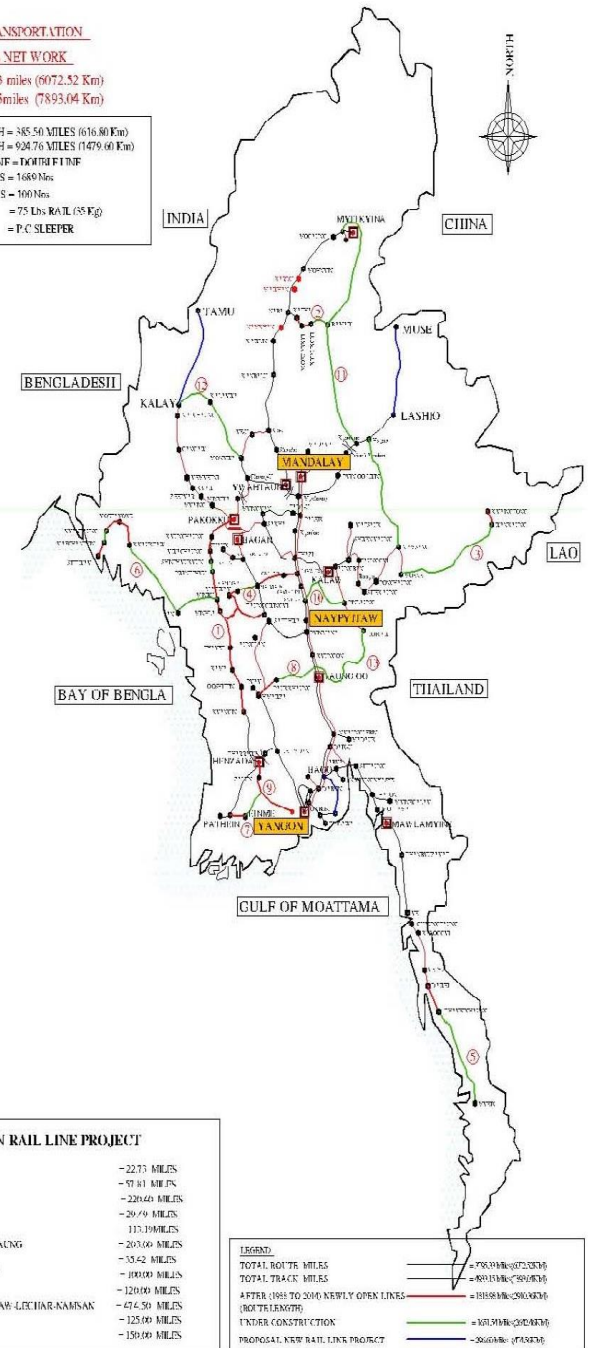
❖ 13 General Manager

### MINISTRY OF RAIL TRANSPORTATION

#### MYANMA RAILWAYS NET WORK

TOTAL ROUTE MILE = 3795.33 miles (6072.52 Km)  
 TOTAL TRUCK MILE = 4933.15 miles (7893.04 Km)

YANGON - MANDALAY LINE ROUTE LENGTH = 385.50 MILES (616.80 Km)  
 TRACK LENGTH = 924.76 MILES (1479.60 Km)  
 NUMBER OF TANK & DORTHERTINE  
 NUMBER OF BRIDGES = 1680 Nos  
 NUMBER OF STATIONS = 100 Nos  
 TYPE OF RAIL = 75 Lbs RAIL (55 P/G)  
 TYPE OF SLEEPER = P.C SLEEPER



#### UNDER CONSTRUCTION RAIL LINE PROJECT

၀၁) ပုသိမ်-တနင်္သာရီ	- 22.73 MILES
၀၂) ကျောက်ဆည်-ရေစက်	- 57.81 MILES
၀၃) မြင်းမူ-အင်္ဂလိပ်	- 220.60 MILES
၀၄) အင်္ဂလိပ်-ကျောက်ဆည်	- 26.99 MILES
၀၅) အင်္ဂလိပ်-ကျောက်ဆည်	- 113.19 MILES
၀၆) မြင်းမူ-ကျောက်ဆည် & ဖျောက်ဖျက်-ကျောက်ဆည်	- 203.00 MILES
၀၇) မြင်းမူ-ကျောက်ဆည်	- 13.42 MILES
၀၈) မြင်းမူ-ကျောက်ဆည်	- 100.00 MILES
၀၉) ကျောက်ဆည်-ရေစက်-ပုသိမ်	- 120.00 MILES
၀၁၀) မြင်းမူ-ကျောက်ဆည်-ရေစက်-ပုသိမ်-လှိုင်-ကျောက်ဆည်	- 474.50 MILES
၀၁၁) မြင်းမူ-ကျောက်ဆည်-ကျောက်ဆည်	- 125.00 MILES
၀၁၂) တနင်္သာရီ-ကျောက်ဆည်	- 150.00 MILES

#### LEGEND

TOTAL ROUTE MILES	= 3795.33 Miles (6072.52 Km)
TOTAL TRACK MILES	= 8933.15 Miles (14230.34 Km)
ASSETS (1985 TO 2010) NEWLY OPEN LINES	= 1055.8 Miles (1683.3 Km)
ROUTE LENGTH	= 3795.33 Miles (6072.52 Km)
UNDER CONSTRUCTION	= 381.9 Miles (613.2 Km)
PROPOSED NEW RAIL LINE PROJECT	= 260.6 Miles (419.2 Km)



MR replaced its old No.5 up-train and No.6 down-train with modern locomotive and coaches on 18<sup>th</sup> january 2016.



21/09/2017



Myanmar Railways

# Present Situation of Myanmar Railways

## Railways Services

Train Type	No. of Trains/day
Passenger Trains	
Express	38
Mail & Others	62
Mixed	52
Rail Bus	22
<b>Sub-Total</b>	<b>174</b>
Yangon Suburban Trains	220
Freight Trains	18
<b>Total</b>	<b>412</b>





# Traffic Volume



## Passenger Traffic

(In Million)

Classification	Year				
	2013- 2014	2014- 2015	2015- 2016	2016- 2017	2017- 2018(Prov)
<b>No. of Passenger</b>					
<b>Main</b>	21.834	19.733	16.919	16.396	16.361
<b>Suburban</b>	31.374	28.150	25.126	27.868	30.353
<b>Total</b>	53.208	47.883	42.045	44.264	46.714
<b>Passenger/Day</b>	0.15	0.13	0.12	0.12	0.13
<b>Passenger Mile ( 100 Million)</b>	22.268	21.227	19.470	19.658	19.698

## Existing Locomotives in (2018-2019)

Srl	Description	Qty	Remarks
1.	ABC Coupler, Vacuum Brake System	268	
2.	AAR Coupler, Air Brake System	140	
3.	RBE	249	



## Existing Locomotives in ( 2018- 2019)

ABC - Vacuum Brake System						AAR - Vacuum Brake System											
Locomotives						Locomotives						RBE ( Made in Japan ) In-Services					
Horse Power	Cpoupler Height	DEL	Maker	Qty:	Age	Horse Power	Cpoupler Height	DEL	Maker	Qty:	Age	Horse Power	Cpoupler Height	DEL	Type	Qty:	Age
300	1' 11"	DHL	Daewoo	1	31	2200	2' 7"	DHL	Japan ( Used )	1	44	500	2' 10"	DHL	KIHA 52	14	50 to 54
300	1' 11"	DHL	Daewoo/ YUG	2	22	900	1' 11"	DEL	Alstom ( Modified )	3	41	300	2' 10"	DHL	KIHA 58	12	50 to 54
300	1' 11"	DHL	Daewoo/ YUG	2	6	1100	2' 7"	DHL	Japan ( Used )	2	42	500	2' 10"	DHL	KIHA 58	2	50 to 54
500	1' 11"	DHL	HITACHI / K.S.K	6	53	1100	2' 7"	DHL	Sifang ( Gift )	35	38	300	2' 10"	DHL	KIHA 11	1	41
500	1' 11"	DHL	K.H.I	4	39 to 40	1200	1' 11"	DEL	MR	8	8 to 11	250	2' 10"	DHL	KIHA 40	15	36 to 47
500	1' 11"	DHL	K.H.I	6	31 to 32	1300	1' 11"	DEL	Rites	11	13	300	2' 10"	DHL	KIHA 40	5	36 to 47
500	1' 11"	DHL	K.H.I	5	29	1300	1' 11"	DEL	Rites	18	1	250	2' 10"	DHL	KIHA 47	3	36 to 47
900	1' 11"	DHL	K.S.K	1	47	2000	1' 11"	DEL	Sifang	9	21	300	2' 10"	DHL	KIHA 47	5	36 to 47
900	1' 11"	DHL	Krupp	16	39 to 49	2000	1' 11"	DEL	Dalian	10	20	250	2' 10"	DHL	KIHA 48	6	36 to 47
900	1' 11"	DHL	Krupp	11	30	2000	1' 11"	DEL	Dalian	20	10	300	2' 10"	DHL	KIHA 48	19	36 to 47
900	1' 11"	DEL	Alstom	16	40 to 44	2000	1' 11"	DEL	Sifang	11	2	250	2' 10"	DHL	KIHA 182	4	36 to 47
1200	1' 11"	DHL	K.S.K	5	46	2000	1' 11"	DEL	Dalian	7	2	300	2' 10"	DHL	KIHA 182	8	36 to 47
1200	1' 11"	DHL	Krupp	6	30	2000	1' 11"	DEL	Dalian	5	1	250	2' 10"	DHL	KIHA 183	7	36 to 47
1200	1' 11"	DEL	Alstom	44	47 to 50	Total					140	250	2' 10"	DHL	ISE-I (LE-Car)	2	31 to 35
1200	1' 11"	DFL	Alstom	9	32 to 34						250	2' 10"	DHL	KIHA 48	8	31 to 35	
1200	1' 11"	DEL	MR	1	24	To be added in 2018-2019					250	2' 10"	DHL	LE 20	6	31 to 35	
1200	1' 11"	DEL	Sifang	4	22						250	2' 10"	DHL	LE 200	2	31 to 35	
1300	1' 11"	DEL	Rites	10	33	1. 2000 HP Dalian - China Loco = 10 Nos.					300	2' 10"	DHL	LE 30	5	31 to 35	
1300	1' 11"	DFL	Rites	40	21 to 26						250	2' 10"	DHL	NT 100	4	31 to 35	
1500	1' 11"	DHL	Krupp	16	54						250	2' 10"	DHL	CR 70	2	26 to 30	
1500	1' 11"	DHL	K.S.K	5	46						250	2' 10"	DHL	ISE-II	1	26 to 30	
1600	1' 11"	DEL	Alstom	31	39 to 47						300	2' 10"	DHL	KIHA 11	15	26 to 30	
2000	1' 11"	DEL	Alstom	15	31						250	2' 10"	DHL	KIHA 141	6	26 to 30	
2000	1' 11"	DEL	Dalian	12	23 to 25						500	2' 10"	DHL	KIHA 142	6	26 to 30	
Total				268							250	2' 10"	DHL	KIHA 180	10	26 to 30	
											250	2' 10"	DHL	KIHA 181	5	26 to 30	
											300	2' 10"	DHL	KIHA 40	1	26 to 30	
											250	2' 10"	DHL	KIHA 48	3	26 to 30	
											250	2' 10"	DHL	LE 20	16	26 to 30	
ABC Locomotives				268	Nos.						250	2' 10"	DHL	LE 200/MR 100	2	26 to 30	
AAR Locomotives				140	Nos.						250	2' 10"	DHL	MR-100	16	26 to 30	
Totla Loco:				408	Nos.						250	2' 10"	DHL	MR-120	2	26 to 30	
											250	2' 10"	DHL	NT-100 (LE-DC)	11	26 to 30	
RBE				249	Nos.						250	2' 10"	DHL	NT-120 D (NDC)	4	26 to 30	
											300	2' 10"	DHL	IRT-355	1	20 to 25	
											300	2' 10"	DHL	KIHA 11	5	20 to 25	
											300	2' 10"	DHL	KIHA-141	6	20 to 25	
											500	2' 10"	DHL	KIHA-142	4	20 to 25	
											250	2' 10"	DHL	LE-20 (LE-Car)	1	20 to 25	
											250	2' 10"	DHL	LE-30 (LE-DC)	4	20 to 25	
Total																249	

## Existing Coaches in (2018-2019)

Srl	Description	Qty	Remarks
1.	ABC Coupler, Vacuum Brake System	1020	
2.	AAR Coupler, Air Brake System	493	







## Existing Wagons in (2018-2019)

Srl	Description	Qty	Remarks
1.	ABC Coupler, Vacuum Brake System	3514	
2.	AAR Coupler, Air Brake System	914	



# Detail List of Wagon

ABC- Vacuum Brake System					AAR - Air Brake System					AAR (High) - Air Brake System				
Wagons					Wagons					Wagons				
Type		Maker	Qty:	Age	Type		Maker	Qty:	Age	Type		Maker	Qty:	Age
Brake Van	Bogie Wagon	MIT	14	15	Brake Van	Bogie Wagon	Yugo	16	19	Covered	Bogie Wagon	China(Present)	107	9
Brake Van	Bogie Wagon	China	45	28-30	Covered	Bogie Wagon	Yugo	243	20	Open - Low Side	Bogie Wagon	China	32	5
Brake Van	Bogie Wagon	Korea	23	31-40	Open - High Sided	Bogie Wagon	Yugo	62	19	Open - Low Side	Bogie Wagon	China(Present)	69	9
Covered Wagon	Bogie Wagon	Han Steel	65	2-3	Open - Low Sided	Bogie Wagon	India	100	5	OTHER WAGONS	Bogie Wagon	China(Present)	20	9
Covered Wagon	Bogie Wagon	MIT/Korea	99	25-30	Open - Low Sided	Bogie Wagon	Korea	40	13	Brake Van	Bogie Wagon	China(Present)	4	9
Covered Wagon	Bogie Wagon	MIT	8	15	Open - Low Sided	Bogie Wagon	Yugo	42	20				232	
Covered Wagon	Bogie Wagon	Yugo/Korea/MIT/Japan	220	31-40	Tank Wagon	Bogie Wagon	Yugo	16	19					
Departmental	Bogie Wagon	MIT	10	14	Tank Wagon	Bogie Wagon	Yugo	13	19					
Open - High Sided	Bogie Wagon	Yugo/China	43	19-28	Timber Wagon	Bogie Wagon	India	100	5					
Open - High Sided	Bogie Wagon	Korea/Yugo	72	30-31	Timber Wagon	Bogie Wagon	India	50	5					
Open - Low Sided	Bogie Wagon	Yugo	50	31				682						
Others	Bogie Wagon	China	12	19										
Tanker Wagon	Bogie Wagon	Korea/Yugo	44	24-31										
Timber Wagon	Bogie Wagon	Navy,MM(2)	100	6-8										
Timber Wagon	Bogie Wagon	China/Yugo	89	28-31										
			894											
Departmental	Bogie Wagon	MIT/War Dept/India	40	50-73										
Open - High Sided	Bogie Wagon	Yugo/MIT/Japan/War Dept	233	41-71										
Open - Low Sided	Bogie Wagon	MIT	5	50										
Others	Bogie Wagon	Australia/Japan/War Dept	20	48-71										
Tanker Wagon	Bogie Wagon	Yugo/India/Japan/Australia	149	41-76										
Timber Wagon	Bogie Wagon	Yugo/Australia/Japan/India	496	41-71										
Covered Wagon	Bogie Wagon	MIT/Germany	251	47-52										
			1194											
Brake Van	4- Wheeler	MIT/Germany/War Dept	32	18-74										
Covered Wagon	4- Wheeler	MIT/Germany/Japan/India	783	53-69										
Departmental	4- Wheeler	Germany/Japan/Holland/India	74	60-76										
Open - High Sided	4- Wheeler	India	15	69										
Open - Low Sided	4- Wheeler	MIT/Germany/India	426	48-70										
Others	4- Wheeler	War Department	4	73										
Tanke Wagon	4- Wheeler	Japan/MIT/War Department	30	61-71										
Timber Wagon	4- Wheeler	Japan/MIT	62	43-71										
			1426											
			3514											

<b>Write-off</b>	
<b>New Construction</b>	



Expected Rolling  
Stocks Specifications  
for Standardization in  
Near Future

# Locomotive

- **Diesel Electric Locomotive**  
(All Diesel Hydraulic Locomotives will be faded out from service within 15 years)
- **AAR- H type Tight lock, 10 A Contour, Height of Coupler-584 mm.**  
(All ABC Coupler Locomotives will be faded out from service within 10 years)
- **Pure Air Brake System**  
(All Vacuum Brake System Locomotives will be faded out from service within 10 years)
- **Minimum Horse Power – 900 HP**  
(All 500 HP Shunting Locomotives will be faded out from service within 15 years)
- **Type of Engine - Caterpillar**  
(Reliability, Spare parts availability, Maintainability, Fair Price)
- **Type of Bogie-Bo-Bo, Bo-Bo-Bo**  
(Curve Negotiation in existing track)
- **Type of Transmission – AC- AC**  
(All DC motors will be faded out from service within 30 years)
- **Cab Arrangement- Double Cab**  
(All Mono Cab Locomotives will be faded out from service within 30 years)
- **Axle Load -**

# Locomotive

- **Maximum Moving Dimension**
- **Maximum Operating Speed** – 100 Km/hr
- **Type of Traffic**  
Mixed (Passengers and Goods)
- **Type of Wheel set**
  - Tyred Wheels (Cost Effective)
- **Control System**
  - Micro Processor Based
- **Air Supply for Air Suspension Bogie Coaches**





# Coaches

- **Type of Coupler**
  - AAR H type Tight lock, 10 A Contour
  - AAR E type, 10 A Contour (LAF)(All ABC Coupler Coaches will be faded out from service within 10 years)
- **Height of Coupler** - 584 mm
- **Pure Air Brake System**  
(All Vacuum Brake System Coaches will be faded out from service within 10 years)
- **Type of Bogies**
  - Air Suspension Bogie
  - Coil Spring Suspension Pedestal Bogie
- Type of Wheels and Axle - TBU Bearing Mounted Wheel sets
- **Seating Plan**
  - 2+2 for Upper Class Coaches, 2+2 for Ordinary Class Coaches
- **Length of Coaches**
  - 60 ft for Except Ghat Section Line
  - 52 ft for Ghat Section Line
  - 36.5 ft for Ye-Dawei, Aungban-Loikaw, Kalay- Gangaw Lines
- **Train Lighting** - 24 Volt DC
- **Maximum Operating Speed** – 100 Km/hr
- **Maximum Moving Dimension** - ???

# Wagons

- **Type of Coupler**
  - AAR E type, 10 A Contour (LAF)  
(All ABC Coupler Wagons will be faded out from service within 10 years)
- **Height of Coupler** - 584 mm
- **Pure Air Brake System**
  - (All Vacuum Brake System Wagons will be faded out from service within 10 years)
- **Type of Bogies** - Ride Control Bogie (Three Pieces Type)
- **Type of Wheels and Axle**
  - (TBU Bearing Mounted Wheel sets)
- **Type of Wagons**
  - Covered Wagons
  - Container Wagons
  - Tank Wagons
  - Wagons
  - Departmental Wagons
  - Brake Van
- **Length of Wagon**
  - 36 ft for Except Container Wagons, 45 ft for Container Wagons
- **Maximum Operating Speed** – 100 Km/hr
- **Maximum Moving Dimension** - ???

## CONSTRUCTION PROJECTS WITH FOREIGN LOAN BASIS

Srl	Contract No.	QUANTITY				Remarks
		Coaches		Wagons		
		F.E	K.D	F.E	K.D	
1	3/BRC/OECF(MC)/82-83	20	51	25	75	OECF/Stage I/Daewoo
2	3/BRC/OECF(MC)/85-86	2	70	10	130	OECF/Stage II/Daewoo
3	1/MR/HUAXIA(91-92)	4	19	-	-	Sifang /China
4	1/MR/YMC/(93-94)	4	16	14	8	Tangshan / China
5	2/MR/YMEC/(93-94)	-	30	-	-	Sifang / China
6	2/MR/OPEC(MC)/(95-96)	2	11	-	-	Sifang / China
7	1/MR/Complant/(95-96)	-	12	-	10	Sifang / China
8	1/MR/Complant/(96-97)	-	28	-	-	Sifang / China
9	1/EDCF/MR/MYA-4/(97-98)	-	70	-	-	EDCF/Daewoo
10	3/MR/OPEC/(M)/2003-04(III)	-	-	10	30	OPEC/Daewoo
11	4/MR/INDIA(M)2004-05	36	-	-	-	INDIA/RITES
12	1A/MR/INDIA(M)/2010-2011	-	-	250	-	INDIA/RITES
13	2/MR/CMC(MC)/2013-2014	39	21	-	-	CRRC Sifang /China
	<b>TOTAL</b>	<b>107</b>	<b>328</b>	<b>309</b>	<b>253</b>	

F.E = Fully Erected

K.D = Knock Down



# Individual building introduction



Myanmar Railway Coach Manufacturer Project 1



Myanma Railways

Myanma Railways is striving to recover from the worse situation facing presently. MR develops restructuring plans. This plans include upgrade of rail tacks, signaling & train control and rolling stock. To implement this plan Mechanical and Electrical Engineering department develops a modernization investment program. Now, **New Coach Production is started at Myitnge.**



Myanma Railways

Travelling the (622) kilometres (386 miles) by train between Yangona and Mandalay now takes at least 14 hours but will take just 8 hours once the project is finished. The trains would eventually travel at up 100 Km an hour.



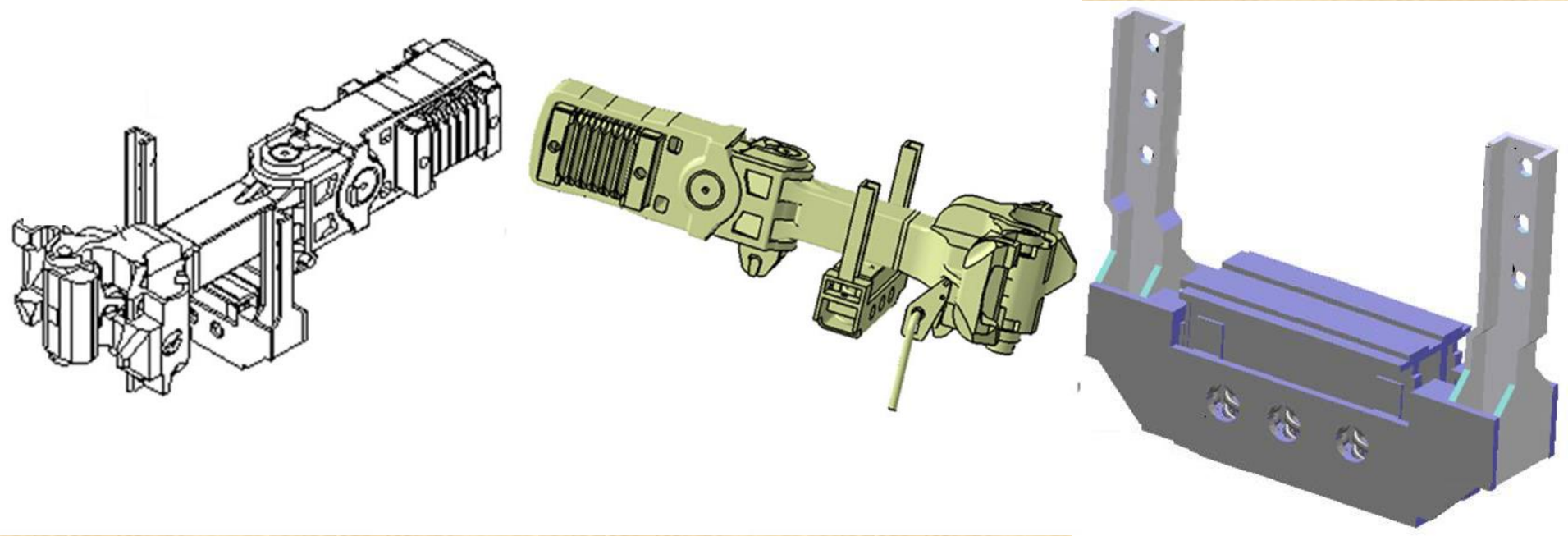


## Objectives of the Project

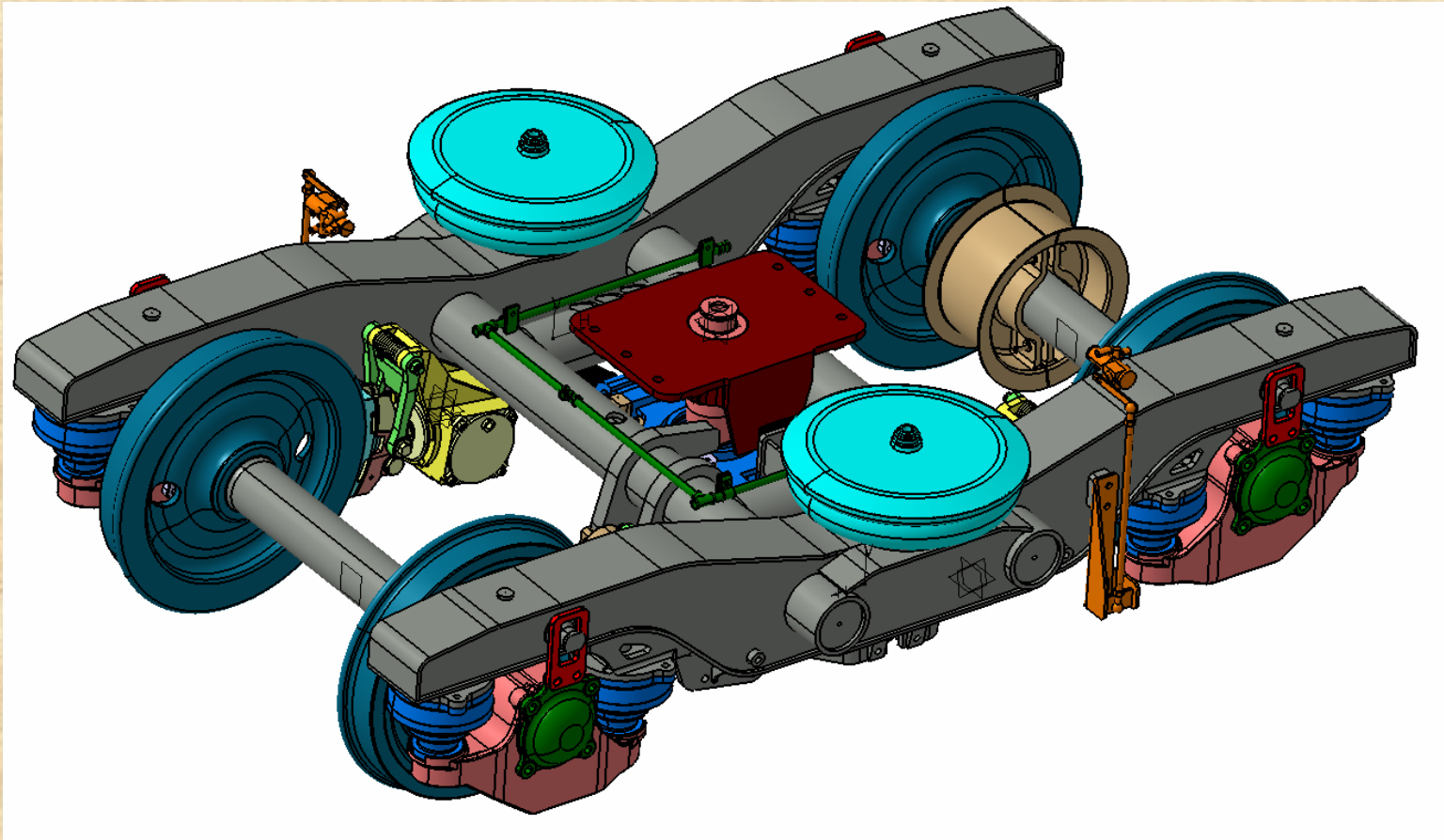
1. To manufacture more quantities of coaching-stocks required for passenger transport.
2. To augment the facilities for new design coaches to improve running speed and passenger satisfaction.
3. To replace the old machineries with new modern machines and to upgrade new design Coaching-stock.



# H-type tight lock coupler



# SYKZ-1 Air Bag Bogie



Max. speed(km/h) :	100	Vibration damping method	Primary : none Secondary: lateral hydraulic damper
Fixed wheel base(mm) :	2200		Spring type
Applicable track gauge (mm):	1000	Bogie brake type	
Minimum negotiable radius of curve (m)	100 for multi-coupling; 60 for single car shunting		Break shoe
Axle load (t) :	12	Wheel	
Wheel set positioning method	Rubber spring positioning		



# New Design Loco and Coaches



## **Conclusion**

**To recover from the worse situation facing presently MR develops restructuring plans. This plans include upgrade of rail tacks, signaling & train control and rolling stock. To implement this plan Mechanical and Electrical Engineering department develops a modernization investment program. MR will manufacture new design coaches. To strengthen the Coaching Stock MR also has plans to manufacture DMUs and Air Conditioned Upper Class Coaches. This New Coaches will provide as key infrastructure for this plans.**



**THANK**

**YOU**