

# OUR PRODUCTS AND SERVICES





## DESIGN MANUFACTURING ENGINEERING



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# TRANSNET ENGINEERING

150 YEARS OF MANUFACTURING EXCELLENCE

Transnet Engineering began its proud and rich history of outstanding supply and service to South Africa's railway networks back in 1859, when the country's first locomotive arrived at the harbour in Cape Town. Today, Transnet Engineering is a recognized brand in rail & related engineering. Transnet Engineering proudly continues in its role as a refurbishing centre of rail stock and has expanded its network of satisfied clients well outside the borders of its home country.

As Transnet SOC Limited's engineering and manufacturing division, Transnet Engineering dedicates its formidable human and capital resources to the research, design, manufacturing and maintenance of locomotives, freight wagons and passenger coaches and port equipment.

Although proudly grounded in South Africa, Transnet engineering is very much a pan-African operation that works with a global perspective, supplying to clients in South Africa, the African Continent and Worldwide.

## TRANSNET ENGINEERING'S COMMITMENT

*To be a manufacturing and engineering services partner of choice for the Africa continent and the world.*

## FACTS ABOUT TRANSNET ENGINEERING

HEAD OFFICE: Koedoespoort

NUMBER OF FACTORIES (PLANTS): 6

NUMBER OF DEPOTS: 143

### ANNUAL OUTPUT: NEW

LOCOMOTIVES: 400

PASSENGER COACHES: 350

FREIGHT WAGONS: 4 500

### ANNUAL OUTPUT: MAINTAINED

LOCOMOTIVES: 2 500

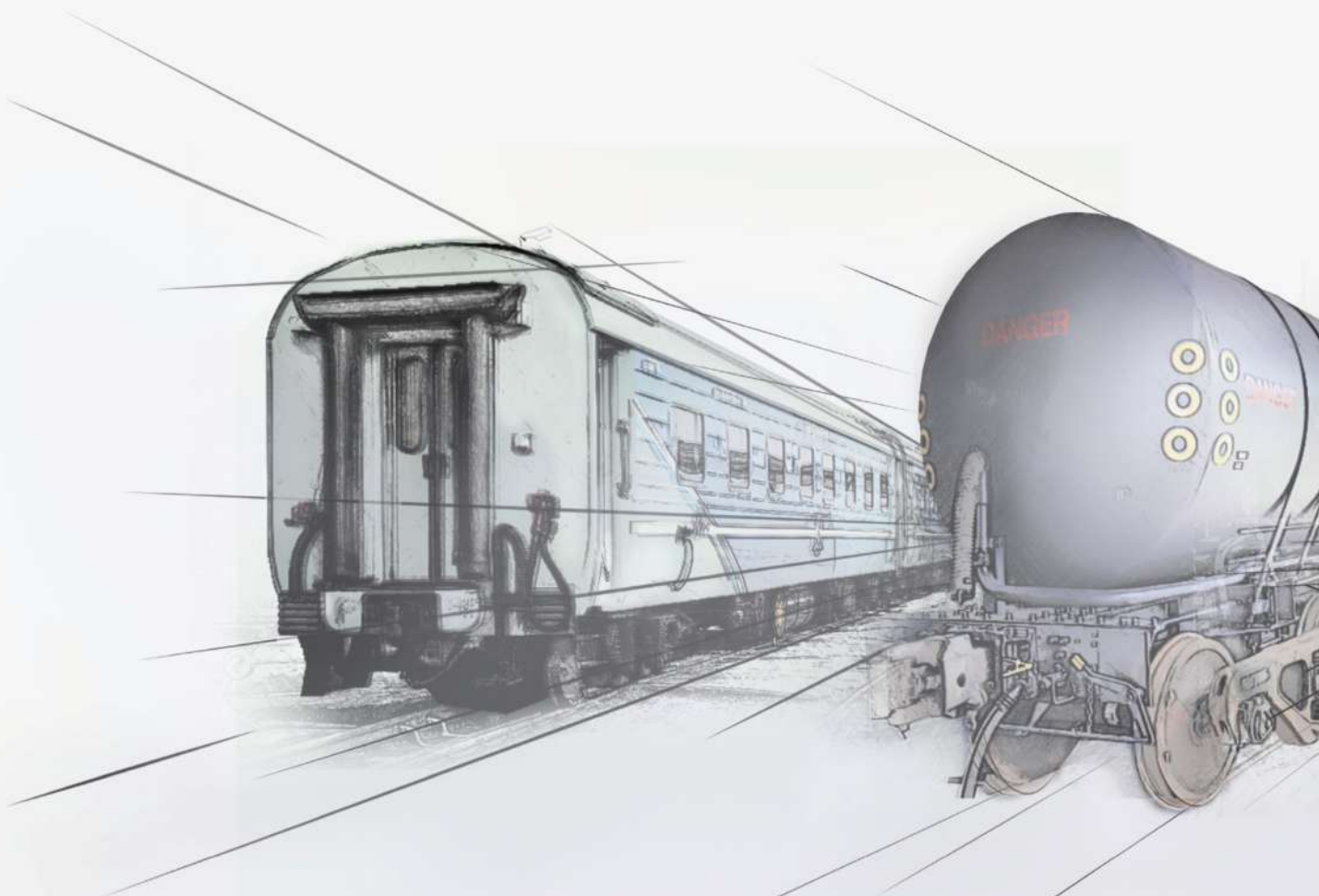
PASSENGER COACHES: 1 200

FREIGHT WAGONS: 75 000



**TRANSNET ENGINEERING'S  
OPERATIONS EXEMPLIFY  
THE VERY HIGHEST GLOBAL  
STANDARDS OF ENGINEERING**







# THE EVOLUTION OF LOCOMOTIVES

1859

Landing of the first railway locomotive in  
Cape Town, South Africa

Running Maintenance was first established

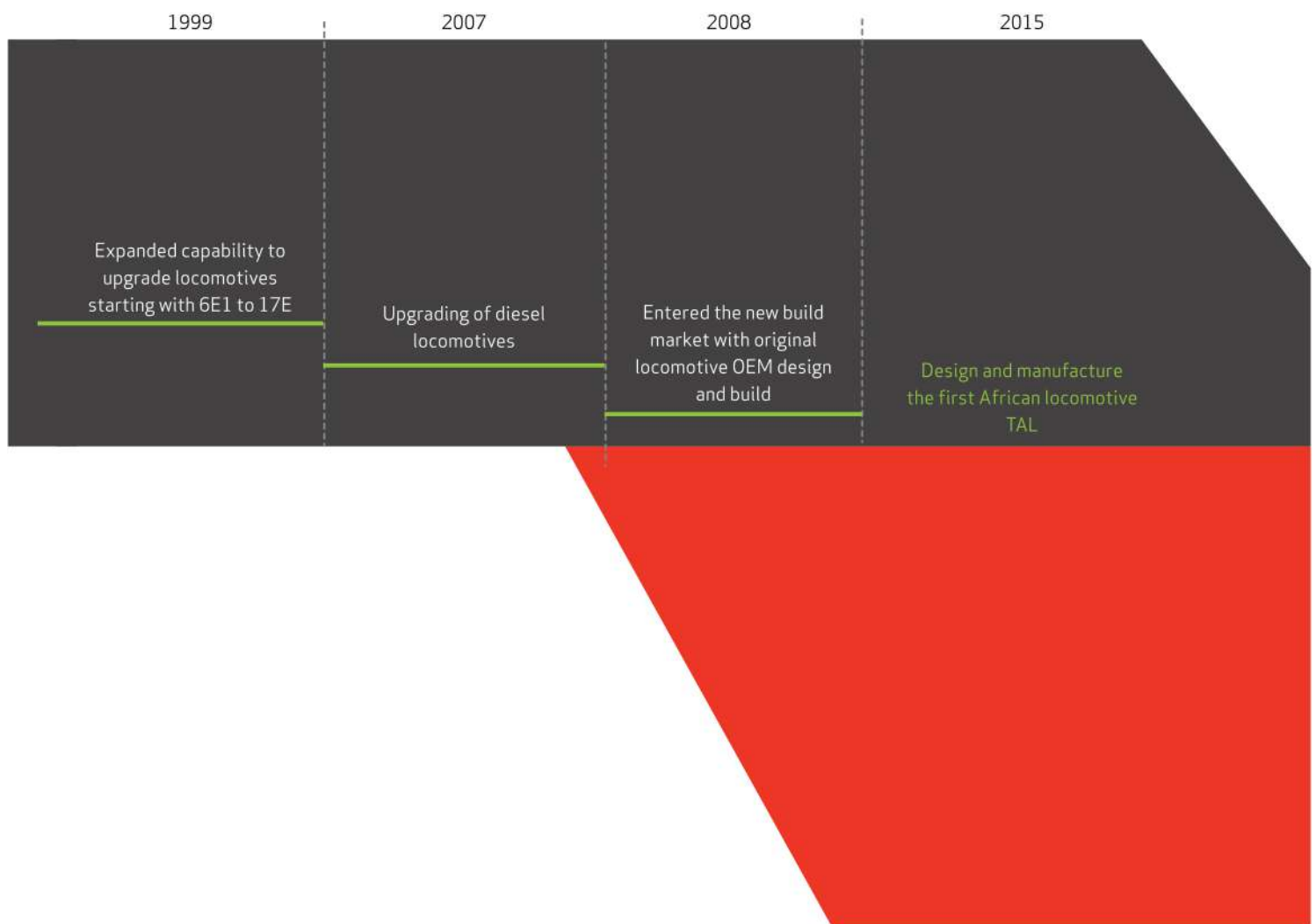
1950

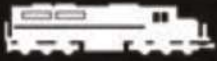
Koedoespoort plant  
established to refurbish  
steam locomotives

1970

Started refurbishing  
electric locomotives

## DRIVING ECONOMIC GROWTH





# LOCOMOTIVES BUSINESS

## MANUFACTURING AND REFURBISHMENT

Transnet Engineering is Sub-Saharan Africa's leading supplier of alternating current (AC), direct current (DC), diesel, and diesel-electric locomotives, and continues to hold its position in the driver's seat of locomotive design and manufacturing across Africa. In addition to manufacturing locomotives, it also upgrades, refurbishes and maintains existing fleets.



## DRIVING AFRICA'S RAIL NETWORKS

The locomotive Business is equipped to build, overhaul, upgrade and maintain diesel-electric and electric locomotives (AC and DC) for a variety of track gauges. Transnet Engineering's high-end overhauling and refurbishing process results in units with greatly extended lives, at a fraction of the cost of purchasing a new unit. The Locomotives Business also undertakes both general and minor overhauls for a range of locomotive classes, including: 6E1, 8E, 10E, AND 18E, amongst others.

The Locomotives Business manufactures four hundred (400) locomotives of varying types each year, including brand new locomotives . It also maintains over two thousand five hundred (2500) locomotives at sixteen (16) major maintenance sites around South Africa, providing customers with a reliable, safe and readily available source of service and repair

While the Locomotives Business has a long history of assembling locomotives in partnership with various Original Equipment Manufacturers (OEM), Transnet Engineering is also an original equipment manufacturer of the Trans Africa Locomotive (TAL). The purpose-built locomotive is an African first that is designed and built in Africa, by Africans, specifically for African needs and conditions.

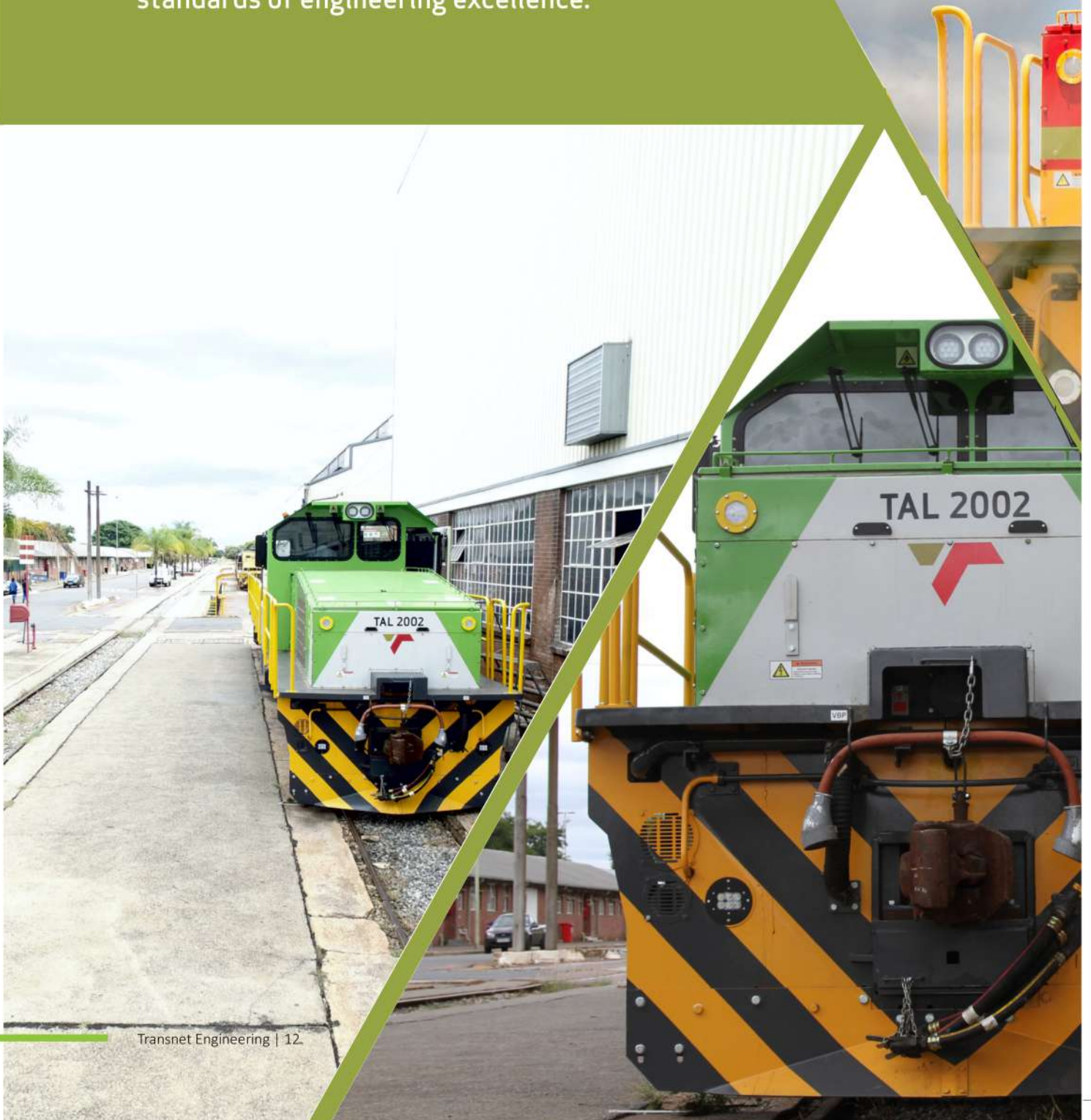
THE LOCOMOTIVES BUSINESS  
BUILDS, REFURBISHES,  
CONVERTS OR UPGRADES  
ABOUT 400 LOCOMOTIVES  
ANNUALLY

PARTNERSHIPS WITH  
INTERNATIONAL OEMS HAVE  
ENABLED THE BUSINESS TO  
SUCCESSFULLY INCREASE SUPPLY  
OF NEW LOCOMOTIVES TO AN  
EXPANDING AFRICAN MARKET

THE BUSINESS MAINTAINS  
2500 LOCOMOTIVES AT 16  
SITES ACROSS SOUTH AFRICA

# LOCOMOTIVES BUSINESS

Driving Africa forward through  
leading-edge technology and timeless  
standards of engineering excellence.



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# THE EVOLUTION OF PASSENGER COACHES

1860

The first  
coach arrived  
in South Africa

1948

The 3M series  
motor in South Africa  
with tow Pantographs

1950 - 1990

The 4M series motor  
in South Africa

# TRANSPORTING THE NATION

1997

Upgrade of standard  
5M2A motor coaches  
& Plain Trailers to 10M  
standard

2002

Upgrading of 5M2A  
chopper control to 10 M3  
modular body structure  
to accommodate  
(water cooled)

2006

Design and build the 10M5  
modular design 3CR12  
body structure

2016

Development and build  
first Unibody mainline  
Passenger Coach



# COACHES BUSINESS

MANUFACTURING AND  
REFURBISHING

Versatile and cost-effective  
solutions for the design and  
build of any type of railway  
car you can imagine.

The Coaches Business is Transnet Engineering's manufacturing, repairs, upgrades and maintenance unit for various railway cars, catering for the needs of Africa's commuter, intercity, and luxury rail services. The Coaches Business builds a variety of coaches, from suburban commuter coaches, to kitchen, sleeper, sitter, conference, baggage, dining cars and Business Express coaches catering for the business class, and everything in-between, including specialised custom coaches built tailor-made to customer requirements and specifications.



The Coaches Business manufactures, reconditions, builds, upgrades and repairs over 250 mainline and suburban electric coaches annually.



The Coaches Business boasts an exceptional fast turnaround time, completing projects in records, such as the 2015 Tshwane Business Express in only four months.



The unique General Overhaul Modular (GOMOD) approach results in train cars that are cost-efficient, well-built, vandal- and fire-proof

Refurbishing includes a wide range of services, with facilities being well equipped and able to upgrade and maintain everything from the luxury Blue Train, to urban commuter coaches. Specialised passenger cars produced by the business range from small tourist trains, to dining, lounge and kitchen cars, power generating units and more. It also manufactured Phelophepa, South Africa's first train built for taking medical and dental services to far-flung areas and rural communities.

Among the technical innovations achieved by this business is the development of the 3CR12 corrosion resistant cladding used on the modular rebodilyng of commuter coaches. This, in turn, led to another innovation called General Overhaul Modular (GOMOD), which is a cost-effective and modular alternative to coach remanufacturing.

The coaches team has also constructed a commuter coach, called 10M5, that is vandal and fire resistant, energy efficient, and extremely low on maintenance, manufacturing components such as the modular 3CR12 sides, ends and roofs, and paneled with high-density polyethylene. The Transnet Engineering Coaches Business is exceptionally versatile; consulting closely with each client to produce passenger coaches that are specially tailored to each client's needs. The Unibody modular mainline passenger coach, that was designed and manufactured by this business, was the first of its kind in the Southern hemisphere, adding to the long list of expertise of the business.





# THE EVOLUTION OF FREIGHT WAGONS

1856

The earliest recorded rail line  
in South Africa was built in Durban

1910

Further development of bogies  
allowed higher payloads of  
50 tons without exceeding  
the maximum axel load

1970

2 axel wagons without  
bogies are withdrawn  
from open-line service

## CARRYING THE ECONOMY





# WAGONS BUSINESS

## MANUFACTURING AND REFURBISHING

**Innovative technology to meet each customer's unique requirements.**

Transnet Engineering's Wagons Business keeps freight moving from supplier to client across a broad range of key economic sectors in Africa. While the bulk of its business has long been the provision of thousands of wagons to the coal, iron ore, manganese and general freight industries, it has long since diversified to include the manufacture and maintenance of wagons for fuel, chemicals, automobiles and agricultural products.

The Wagons Business leads the supply of rolling stock to numerous heavy haul industries around the continent. It manufactures four thousand five hundred (4 500) new wagons per year and maintains a fleet of seventy five thousand (75 000). The flagship products of the Wagons Business are its CCR, CCL, CHR1 coal wagons, CR14 Iron Ore Wagons and CR 19 Manganese Wagons. Built from 3CR12 corrosion-resistant steel, these wagons have an extended lifespan of more than twenty (20) years. They are carried by self steering H5 type bogies suited to both increased speeds and stable conditions.

The business' capacities also extend far beyond just coal and ore carriers. Fuel and chemical tankers, car carriers and various intermodal wagons are all supplied by this industrious business. It operates an extensive network of factories and depots, offering easily available services to customers around the country where wagons are built, overhauled, converted, upgraded and reconditioned. The business takes a proactive approach to product development, anticipating client needs and developing innovative new wagons to suit their specific operating conditions.

Among the pioneering achievements of the business is its first seventy four thousand (74 000) litre ammonia tanker wagon, as well as its development of a revolutionary all-aluminum tanker wagon, which allows for a heavier payload.

The Wagons Business' products have established themselves as the mainstay of heavy haul in Africa and Europe. Customers have come to recognise the business as a provider of quality, cost-effective and innovative rolling stock. The Wagons Business supplies components to clients in numerous African countries and, being based at Transnet Engineering's Uitenhage and Durban harbour-side factories, is in an excellent position to export its products to the international market.



Transnet Engineering's Wagons Business has been the backbone of Africa's freight networks for decades, having transported tons of product for the coal, iron ore and petroleum industries, among others.

75,000



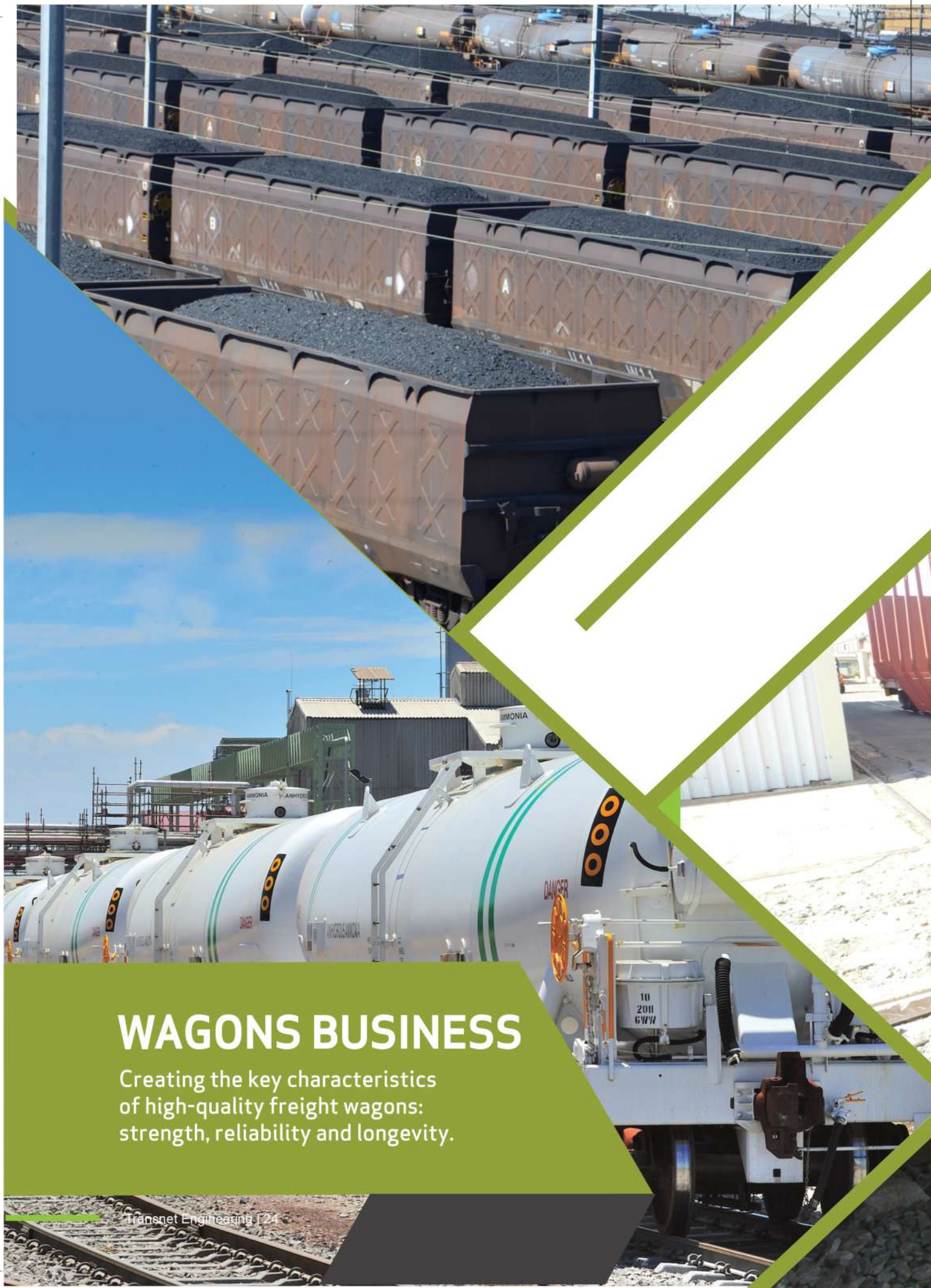
The Wagons Business maintains a fleet of 75 000 wagons per year and builds 4 500 new wagons in the same period.

The Wagons Business has pioneered a number of industry firsts, such as the all-aluminium fuel tanker for a lighter payload.

The Wagons Business can, and has manufactured wagons for various gauges in response to the African environment.



MANUFACTURING  
EXCELLENCE FOR  
AFRICA'S RAILWAYS

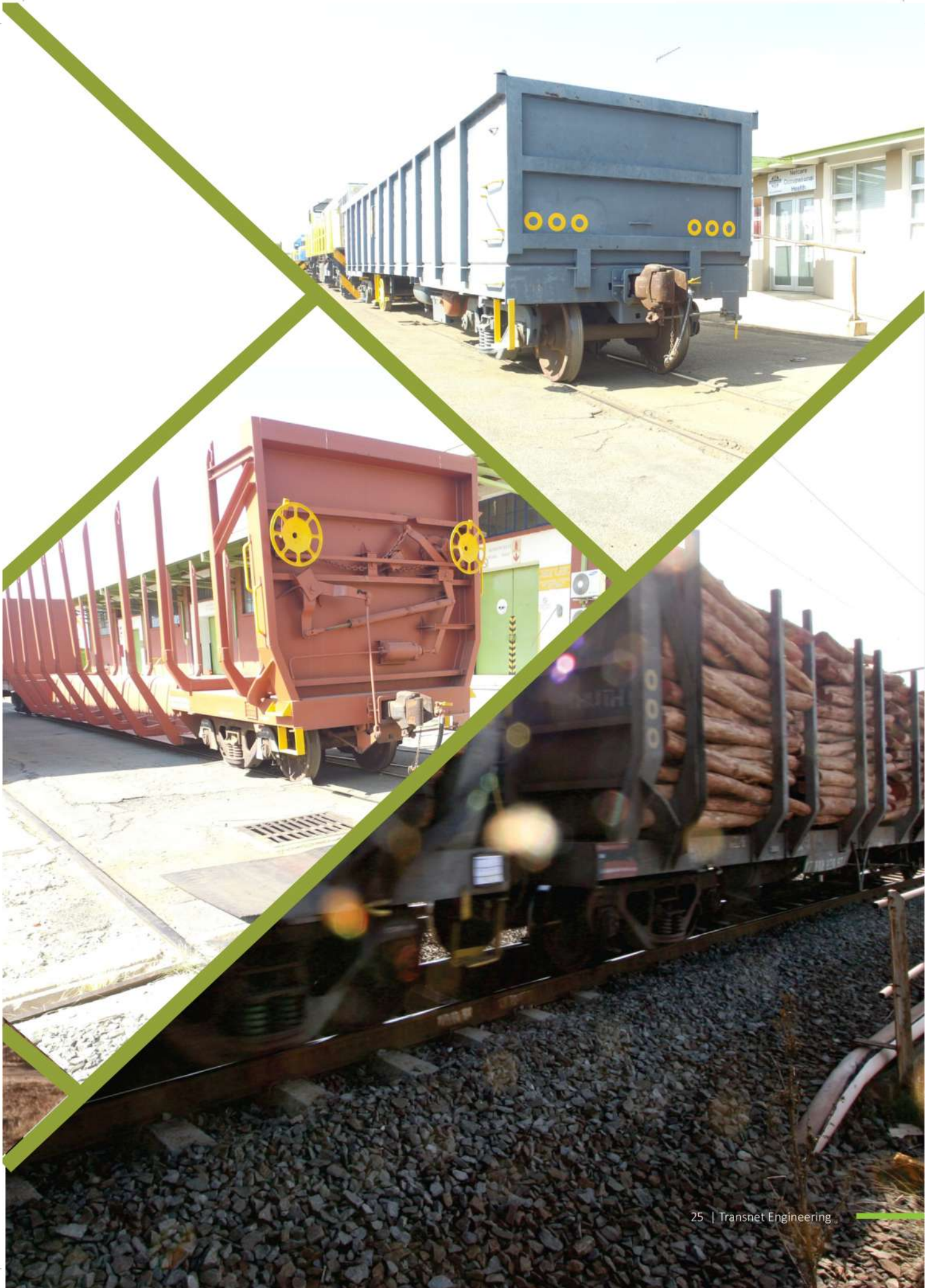


# WAGONS BUSINESS

Creating the key characteristics  
of high-quality freight wagons:  
strength, reliability and longevity.

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# MAINTENANCE AND SERVICES BUSINESS

**COMPLETE AND ADAPTIVE  
MAINTENANCE OFFERINGS  
FOR ALL ROLLING STOCK.**

Transnet Engineering's Maintenance and Services Business deals with the maintenance of all rolling stock, locomotives and freight wagons, port equipment, plant equipment and machinery, as well as the refurbishing of rolling components, such as wheels, traction motors, engines, compressors and exhausters through its Centres of Excellence (COE) located in the main rail corridors.

The main products and services of the business is executed through four (4) departments: locomotive maintenance, freight wagon maintenance, plant equipment and machinery maintenance, rotating machines component maintenance, and rolling stock wheel maintenance.

The business has a broad footprint in the country, with 16 locomotives main depots where the out-of-service maintenance is conducted, and 29 in-service maintenance yards where train inspections are conducted. Freight Wagon maintenance is conducted in 15 major and 5 minor out-of-service depots, and 78 depots for in-service maintenance.

The refurbishing of rotating machines components is undertaken in three (3) Centres of Excellence (COE), based in Salt River, Pretoria and Durban. The rolling stock wheel maintenance is conducted in 8 sites across South Africa. This footprint allows the business to be much closer to the main customer's areas of operations, thus ensuring a quicker response time to customer requirements. Maintenance and Services Business is progressively involved in Port Equipment Maintenance such as straddle carriers and Rubber Tyred Gantry (RTGs) cranes. Port Equipment Maintenance is a new growth area for the business. The strategy is to provide this new service to other Ports in the African continent and beyond.



While Transnet Engineering as a whole is a customer-focused organisation, the Maintenance and Service Business is the most intensively customer-facing of the organisation. Dealing on a daily basis with Transnet Engineering's many long-term clients, this business really brings Transnet Engineering's customer-centred culture to the fore. With a dedication to precision and exceeding the needs of the client every time, the business goes out of its way, not merely to return components to their previous operating state, but to actually improve them and extend their lifespan.



# MAINTENANCE AND SERVICES BUSINESS

Engineering precision and service  
excellence to keep Africa's trains  
moving.





# CULTURE AND PEOPLE

Transnet Engineering is a future-minded and innovative company that is firmly rooted in world-class standards of people management and customer service. The organisation is constantly improving and developing its management, employee-experience and customer-service approach across the board to ensure that these values are met and exceeded at all times.

**IMPROVES ON THE PAST TO DELIVER THE FUTURE WITH A PEOPLE-CENTRED APPROACH TO TECHNOLOGY.**

## CULTURE

Transnet Engineering employees are motivated to approach the business with a dedicated focus on precision and innovation in everything they do. Highly agile and responsive, the organisation adapts swiftly to the introduction of new technologies and the rapidly evolving demands of its clients, and continues to pursue unsurpassed standards of quality and service. At the core of the business is the people who drive it. Transnet Engineering invests enormous resources into nurturing relationships with all stakeholders, investing deeply in its staff and emphasising the importance of personal, flexible and responsive customer service, creating a culture that is focused perfecting the bond between people and technology.

## PEOPLE

In line with its quest for precision, innovation, agility, unparalleled customer service and product quality to rival that of any of its international peers, Transnet Engineering not only sources and retains staff with the requisite skills and expertise, but also personally committed to these values. All of the organisation's six (6) ISO 9001: 2008 certified factories are run by employees that are continuously upskilled in order to advance and update their existing knowledge base. Transnet Engineering has a growing reputation of nurturing employees that are experienced, well-trained and committed.

- **Regular Maintenance & Inspections:** Routine inspections, cleaning, and reapplication of protective coatings to prevent corrosion-related failures. TE achieve this through application of marine-grade paints, epoxy coatings, and zinc-rich primers to create a barrier against moisture and salt exposure
- **Maritime services:** A comprehensive in-service and out-of-service support for port handling equipment used by TPT and TNPA across all major ports in the country. These services are essential for maintaining the operational efficiency and longevity of critical port infrastructure, whilst trying to decongest current port traffic in the ports of Durban and Cape Town.

Product list for Port manufacturing and maintenance ranges from, and not limited to;

- Straddle Carriers
- Rubber Tired Gantries
- Port haulers
- Bulk skips
- Spreader beams
- Forklifts
- Multipurpose trailers
- Automated Rail-Mounted Gantry (RMG) cranes
- Ship To Shore (STS) Container Cranes



# PORTS EQUIPMENT BUSINESS





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## SAFETY

The safety of both the employees and customers of Transnet Engineering remains a top priority in delivering world-class products and services. Transnet Engineering, does not only comply with safety, health and environmental (SHE) policies prescribed by the Railway Safety Regulator (RSR), but also, strives to meet standards of international bodies and related institutions. World-class systems and processes ensure alignment to policies, procedures and regulations in the organisation's efforts to meet and exceed customer expectations. All Transnet Engineering businesses are also OHSAS 18001:2007 and ISO 14001:2004 certified.

## QUALITY

Transnet Engineering has developed an international reputation of manufacturing and delivering premium quality products and services complying with international and prescribed standards that are designed to increase productivity and ensure quality compliance. All six (6) major Centres of Excellence and the one hundred and thirty-two (132) depots have various ISO accreditations including ISO 9001: 2008 and EN 15085, and Transnet Engineering has been awarded licences with numerous Original Equipment Manufacturers (OEMs) as a testament to the trust that the international market has for Transnet Engineering deliverables.



# CULTURE AND PEOPLE

The heart and soul of Transnet  
Engineering is our diversified team.





# CORPORATE SOCIAL INVESTMENT



Corporate Social Investment projects address the social needs faced by our communities.

As a conscious, caring organisation, Transnet Engineering is fully aware of the environment that we operate in.

**Our Corporate Social Investment strategy is very simple.** We identify, assess and respond to the needs of the communities we operate in. Our Corporate Social projects aim to engage previously disadvantaged individuals and communities, inspire and empower them, and activate positive change in their lives.

These include, amongst others:

- Health and welfare
- Community Development
- Education
- Skills and Supply Development

Transnet Engineering contributes to the betterment, well-being, and socio-economic growth of South Africa, driving holistic social change.





Transnet Engineering 40





# CORPORATE SOCIAL INVESTMENT

Passionately developing communities is part of being a passion responsible corporate citizen.



# FOOTPRINT



## STRATEGICALLY LOCATED CENTRES OF EXCELLENCE

With headquarters in Koedoespoort, Tshwane, Transnet Engineering designs and manufactures its products and services at six (6) major factories across South Africa. Each of these six (6) factories has capacities suited to different combinations of the organisation's business operations.

The Transnet Engineering factories and depots are strategically placed to ensure maximum service opportunities for clients. The depots are arranged as satellites around the main centres of excellence, bridging gaps between the organisation and clients countrywide, as well as abroad, and factories are set up with both domestic and international clients in mind.

# TRANSNET ENGINEERING'S CENTRES OF ADVANCED MANUFACTURING

## 01 KOEDOESPOORT TSHWANE:



Koedoespoort is the head office of Transnet Engineering, where its senior management and high-tech support infrastructure are housed. This is the epicenter of Transnet Engineering, where top-level strategy is formulated, and national operations are coordinated and monitored.

## 02 KOEDOESPOORT TSHWANE



The flagship 100 ha mini-city manufacturing centre of Transnet Engineering was first opened in 1954. This giant factory is home to operations across all of Transnet Engineering's four customer-facing businesses.

## 03 DURBAN BAYHEAD



Located 10km from the Durban city centre, this 3.4 ha facility first opened its doors in 1974. It is a home to key manufacturing and maintenance services across all of Transnet Engineering's businesses, with a particular focus on coal wagons.

## 04 UITENHAGE NELSON MANDELA BAY



This operation is a home to a major production and repair hub for wagons, including the manufacturing of rolling stock equipment and wheels. Being located close to the harbour of Gqeberha, this factory is one of the Suppliers of Transet Engineering's international clients.

## 05 GERMISTON, EAST RAND



This factory boasts a large wagons operation, with resources also set aside for major work on diesel and electric locomotives. It also hosts major wheel, auxiliary and container operations for the Maintenance and Service Business.

## 06 BLOEMFONTEIN



The Bloemfontein centre was opened in 1948. This site is a large-scale manufacturing and repairing hub of products across all Transnet Engineering.

## 07 SALT RIVER, CAPE TOWN



The factory has been used as a site for rail engineering since 1860, and is currently a centre for coach building, as well as various other maintenance and services operations.

# CUSTOMERS

Transnet Engineering is a customer-centric organisation, that is big enough to service internationally, and agile enough to cater for specific needs of our customers.

## **Locomotives Customers**

TFR, CDN, Transnamib, DRC – SCTP, Botswana Rail, PRASA, Thelo, CEAR,

## **Freight Coaches Customers**

Botswana Railways, PRASA, CDN and CEAR

## **Freight Wagons Customers**

Swaziland Railways, Transnet Freight Rail, Botswana Railways, Exxaro, Omnia, Sasol, CDN, Rio Tinto

## **Maintenance and Services Customers**

TFR, CDN, Transnamib, DRC – SCTP, Botswana Railways, PRASA







**ENGINEERING AND MANUFACTURING  
WHATEVER IT TAKES.**





TRANSNET



engineering

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|            |                                                                                  |
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