Turbomeca’s 1st R&D and production center

Created in 1938, Turbomeca set up in Bordes in 1942, near Pau. There are now more than 2,600 employees on the site.

At the Turbomeca headquarters in Bordes, the Research & Development and Series Production units work side by side:
  • 40% of manufacture is carried out internally
  • Assembly, tests and final assembly
  • 800 engineers and technicians dedicated to R&D

Site Management includes the following entities:
  • Human resources,
  • General Resources and Buildings/New Works Dept.,
  • Corporate security,
  • Occupational health services,
  • Safety-Environment.
2,639 employees (April 30, 2014)

Distribution by Division:

Operational divisions:
- Operations Division: 1176
- Engineering Division: 863
- Airframers Sales Division: 87
- Support and Services Division: 69

Steering divisions:
- Programs Division: 42
- Quality and process Excellence Division: 96

Support Functions: 306

(Human Resources Division, Corporate Office,...)

Distribution by socio-professional category:
- Managerial staff: 1,246
- Employees, technicians and supervisors: 831
- Workers: 562

628 sub-contractors present on site (December 2013)
Organization oriented towards "families of parts" in order to:

- Optimize our industrial tool (reduction of design and production cycles, improvement of Quality/Costs/Lead times/HSE)

- Achieve the operational objectives required by our customers (deliver new engines and spare parts within the leadtimes, reduce the development timescales of our engines).
6 Competence Centers based in Bordes:

- CCI Structures
- CCI Veine d’air (Air path)
- CCI Hydromécanique (Hydromechanics)
- CCI Ensembles Tournants (Rotating Assemblies)
- CCI Réducteurs (Reduction gearboxes)
- CCI Combustion (Combustion)
- CCI Procédés Spéciaux et pièces spécifiques (Special Processes and dedicated parts)
- CC Intégration / montage (Integration / assembly)
- CC Système de Régulation (Control System)
What is a Competence Center (CC):

- A CC is focused on a single family of parts or equipment.

- A CCI groups all the specialties and resources around these parts: Engineering, Industrialization, Production, Purchasing, Provisioning, Quality, Planning, Management Control, Human Resources.

Mission:

- Design and industrialize, validate and qualify, produce or purchase components, parts and equipment.
An integral part of Turbomeca development, the integration of Health, Safety and Environment (HSE) issues, is translated within the Bordes site into actions and results, including:

- An internal HSE organization and a site certified ISO 14001 since 2003

- Reductions in environmental impacts:
  - 65% of our non-hazardous industrial waste recycled.
  - 250 K€ invested in an evaporator-concentrator for treatment of dye penetrant inspection water.

- Improvements in work conditions:
  - An integrated approach with the HSE, CHSCT (hygiene, safety and working conditions committee), and project follow-up commission sectors.
  - Deployment of ergonomic analyses both for current workstations and those under design.
  - Adoption of the HSE approach by our major sub-contractors (HSE passport).

- Cross-sector projects:
  - Prevention of psycho-social risks, addictive behavior, Site transport plan, etc.
Optimize the process and industrial flows and improve working conditions

Working groups comprising the operator, the ergonomist, the Progress Actions controller, the HSE officer and the HR advisor are implemented to optimize the process and the industrial flows and improve working conditions.
JOSEPH SZYDLOWSKI BUILDINGS
A MODERN PLANT
FOR OPTIMAL INDUSTRIAL EFFICIENCY
A site built in 1942, due for modernization in phase with the demands of a modern industrial organization

For Turbomeca: a modern plant for optimal industrial efficiency
- Reduce production cycles by more than half by optimizing flows and reducing manufacturing cycles
- Bring design teams and production teams together
- Achieve the highest HSE standards: a plant that is both human and environmentally friendly

For local and regional authorities
- Sustain Turbomeca’s activities in the region
- Give impetus to a cluster of industrial activities and services around the Turbomeca site: Aeropolis within Aerospace Valley
Safran investment: 100 M€

1,300 persons:
- 800 in the central offices
- 500 in the production units

5 production centers:
1. Reduction gearboxes
2. Rotating assemblies
3. Combustion
4. Integration / assembly
5. Special Processes
Production activities for each family of parts

1. **Reduction gearboxes**
   - Reduction gearbox pinions (air intake reduction gears)
   - Accessory gearbox pinions

2. **Rotating assemblies**
   - Turbine discs
   - Injection and axial wheels
   - Centrifugal compressors
   - Shafts

3. **Combustion**
   - Combustion chambers
   - Flame tubes
   - Parts for shaped and welded assemblies
Production activities for each family of parts

Series production
- Build new engines using parts and sub-assemblies taken from the logistics system
- Check their conformity by testing, check and document their configuration, ensuring excellence in terms of Quality/Lead time/Cost performance for integrator customers.

R&D
- Perform experimental activities to provide results for the Engine and Research Project teams in the context of support, certification and technology demonstrators.
Production activities for each family of parts

Special processes and dedicated parts
- Treat the various engine parts to give them mechanical properties (hardness, resistance) and manufacture small series production parts.

Activities
- Heat treatments on different types of steels and alloys (aluminum, copper, titanium).
- Assembly of components by furnace and induction brazing.
- Surface treatment and Non-destructive Testing and machining.

Special Processes and dedicated parts
Objective: production cycles reduced by more than half in 3 years

- Separate paths for personnel and parts
- Production centers organized in production lines (Lean)
- R&D and production teams working in close synergy
Five production centers linked by a private road around the perimeter of the site

- Private road for the movement of parts
- Inner streets for personnel

Four centers built along the same design but with different dimensions

Production facilities and design offices integrated in the plant and located in the central building
A plant that is both human and environmentally friendly

- Working in optimal conditions
  - Treatment of vapor emissions
  - Adapted lighting
  - Controlled temperature

- Environmentally friendly site
  - Example: energy & fluids station including wood-fired heating
Thank you for your time