SCREENING CHAPTER 20
ENTERPRISE AND INDUSTRY POLICY

AGENDA ITEM XIII: AEROSPACE

Country Session: The Republic of TURKEY
4-5 May 2006

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- Legal Framework
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- Consultation Mechanisms
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OVERVIEW

Basic Statistics of Turkish Air Transportation Sector

	2004	2005	2006
Number of Commercial Aircrafts in Turkey			
Passenger	180	213	211
Cargo	11	21	24
Air Passenger Traffic			
Domestic	14,427,969	19,942,692	4,985,376 (by the end of march)
International	30,361,171	34,583,035	3,853,376 (by the end of march)
Airports			
Domestic	31	33	31
International	21	18	20

Source: Directorate General of Civil Aviation and General Directorate of State Airports Authority

- **International Memberships in Aerospace**

Turkey is a member of:

- Joint Aviation Authorities

- European Civil Aviation Conference

- European Organisation for the Safety of Air Navigation (EUROCONTROL)

Sectoral Education (2006)

- Educational Departments
  - ✓ **2 Engineering Departments-141 students per year (Aerospace, Aeronautical, Astronautical Engineering)**
  - ✓ **2 Aviation Schools-84 students per year (Avionics, Air Traffic Control, Flight Training, Aviation Management, Airframe-Power Plant Maintenance, Aircraft Electrics and Electronics)**
  - ✓ **Aeronautics and Space Technologies Institute**
- Civilian Academic Staff
  - ✓ **23 Professors**
  - ✓ **7 Associate Professors**
  - ✓ **37 Doctors**
  - ✓ **43 Research Assistants**

Source: The Adhoc Committe Report on Aerospace (2006) (not printed yet)

Production Data

(mio euro)

	2002	2003	2004
TAI	77.0	39.0	37.5
TEI	50.5	42.8	40.8
Military Centres (Excluding electronic facilities)	145.6	146.1	142.8

Source:TAI, TEI and Military Centres

Employment Distribution of Main Aerospace Organisations

Distribution of Human Resource in TAI, TEI, ROKETSAN, Military Centres (excluding military centres based on electronic facilities)	Number of employees
Engineer	**1,198**
R&D	726
Manufacturing	434
MRO	38
Technician	**3,010**
Manufacturing	2,532
MRO	478
Administrative Staff	**2,658**
TOTAL	**12,074**

Source: TAI, TEI, ROKETSAN and Mlitary Centres

Basic Characteristics of Aerospace Sector

- Awareness of the Importance of R&D
- Experience and Capability in MRO (civilian&military)
- Low cost of human resource

POLICY DOCUMENTS

Policy Documents

- 8th Five Year Development Plan (2001-2005)
- Circular of Science and Technology High Council Decision (22 October 2004)
- Circular of Science and Technology High Council Decision (12 April 2005)

Aerospace Policy;

- 8th Five Year Development Plan
  - ✓ As a knowledge and advanced technology based industry, to increase the competetiveness and development of aerospace industry has a priority.
  - ✓ An Aerospace Organisation will be established in order to coordinate the related facilities.

- Circular of Science and Technology High Council Decision (22 October 2004)
  - ✓ The Decision to Establish an Aerospace Studies Council and to prepare a Turkish Space Policy

- Circular of Science and Technology High Council Decision (12 April 2004)
  - ✓ The Decision to Start a National Space Research Programme

LEGAL FRAMEWORK

Basic Legislation;

- Law on Turkish Civil Aviation No.2920
  (Official Gazette 19.10.1983, no:18196)
- Law on Establishment and Duties of Ministry of Transport No.3348
  (Official Gazette 17.04.1987, no:19434)
- Law on Reorganization of Turkish Civil Aviation Authority No.5431
  (Official Gazette 18.11.2005, no:25997)
- Law on Defence Industry and Undersecretariat for Defence Industries No.3238
  (Official Gazette 13.11.1985, no:18927)
- Law on Development, Manufacturing and Initial Support for A400M Aircraft No.5421
  (Official Gazette 6.11.2005, no: 25985)
- Law on Development of JSF Aircraft No.5425
  (Official Gazette: 6.11.2005, no:25985)

Secondary Legislation;

- By-law on the Personel Approving Aircraft (SHY-66)
- Order on Licences of Aircraft Maintenance Technicians (SHD-T-35)
- By-law on Registration (SHD-T.34)
- By-law on Certified Maintenance Organisations (SHY-145)
- By-law on Maintenance Systems of Commercial Air Transport Companies (SHY-M)
- By-law on Civil Aviation Technical Inspection (SHY 21)
- By-law on the Licences of Air Traffic Controllers (SHY 65-01)
- By-law on Investigations of Civil Aircraft Accidents (SHY 13)
- By-law on Notification and Evaluation of Events Affecting Air Safety (SHY 65.02)
- By-law on Aircraft Operation (SHY 6B)
- By-law on Light Aircrafts (SHY 6C)

Source: Turkish Civil Aviation Authority

INSTITUTIONS INVOLVED

POLICY MAKING AND IMPLEMENTING BODIES

Ministry of Transport	
Directorate General of Civil Aviation	Licensing and monitoring of aircrafts and human resources
General Directorate of State Airports Authority	Management and operation of airports and air traffic control
Ministry of Defence	
Undersecretariat for Defence Industries	Management of military procurement projects including aerospace
Defence Industry Executive Committee	Decision making body for military procurement projects including aerospace
State Planning Organization	Planning of science and technology policy and general management of related funds
Science and Technology High Council	Decision and policy making body for research and development
TUBITAK	Promoting, developing, organising, conducting and coordinating R&D

Industrial Companies	Area of Concentration
•TAI (Tusas Aerospace Industries)	Design, engineering, manufacturing, and MRO of aircraft systems
•TEI (Tusas Engine Industries)	Engine assembly and overhaul, engine parts manufacturing
•ROKETSAN (ROKETSAN Missiles Industries)	Enginnering, development and production of missile systems
Military Aviation Centres	
•Turkish Air Force 1st Air Supply and Maintenance Center	Fighter aircrafts and gas turbine engines of Turkish Air Force
•Turkish Air Force 2nd Air Supply and Maintenance Center	Other aircrafts and engines of Turkish Air Force
•Turkish Air Force 3rd Air Supply and Maintenance Center	Electronic systems of military aircrafts of Turkish Air Force
•Land Forces Command 5th Main Maintenance Center Command	Helicopters and aircrafts of Turkish Land Forces Command
Aircraft Maintenance-Overhaul-Repair Organizations	
•THY (Turkish Airlines-Technical Services/SOE)	MRO of civil aircrafts
•MNG Technic	MRO of civil aircrafts

CONSULTATION MECHANISM

- **Vision 2023: Strategies for Science and Technology Project-Panel Report on Defence, Aeronautics and Space Industries (July 2003)**
  - ✓ To give priority to R&D based procurement
  - ✓ An industrial policy of national technological development rather than domestic manufacturing
- **Ad-hoc Committee Report on Aircraft Manufacturing Industry (2001)**
  - ✓ To establish an aerospace organisation
  - ✓ To establish new educational departments and increase the quality of the education
  - ✓ To establish joint partnerships instead of direct procurement for procurement systems.
- **Ad-hoc Committee Report on Aerospace Industry (2006, not printed yet)**
  - ✓ To establish an aerospace organisation
  - ✓ To reduce the tax burden of aerospace organisations
  - ✓ To increase the number and quality of human resources

INSTRUMENTS

AND

MAIN TOOLS FOR R&D

Public Support Programmes

Institution	Basic Programmes
Undersecretariat of Treasury	Support for investments, Regional development, SMEs
Undersecretariat for Foreign Trade	Support for training, R&D and SMEs
TURK EXIMBANK	Export credits and insurance
KOSGEB	Support for SMEs
Ministry of Finance, Turkish Revenue Administration	Tax exemption and exceptions, public land sales, regional aid
Ministry of Industry and Trade	Regional aid, R&D support (Organised Industrial Zones, Technology Development Zones)
TUBITAK	Support for R&D

Main Tools for R&D:

- R&D Budget of The Scientific and Research Council of Turkey (allocated by SPO)
- R&D Budget of Universities (allocated by SPO)
- Defence Industry Support Fund (Undersecretariat for Defence Industries)
- EU 6th Framework Programme (FP6) Budget

IMPORTANT PROJECTS AND PROGRAMMES

Ongoing Partnership Projects within FP6

- **ALCAS**-Advanced Low-Cost Aircraft Structures-TUSAS Aerospace Industries (TAI)
- **Turnex-** Turbomachinery Noise Radiation through the Engine Exhaust–Middle East Technical University (METU)

Ongoing Partnership Projects with EU Companies

- A400M TRANSPORT AIRCRAFT (TAI)
  - ✓ Partnership with Airbus Military S.L.
  - ✓ 10/180 Aircrafts
  - ✓ 7.15% of the Structural Package (middle fuselage, emergency windows, doors, upper-rear fuselage)
  - ✓ 1.26% of the System Package (lighting system, disposal system)
- AB139 HELICOPTER PROJECT (TAI)
  - ✓ Partnership with Agusta
  - ✓ 250 AB319 helicopter fuselage within next 12 years
- MANUFACTURING OF FUSELAGE PANELS FOR AIRBUS (TAI)
  - ✓ Partnership with EADS-CASA
  - ✓ 300 sets of fuselage panel for A319/320/321 aircrafts
  - ✓ 105 sets submitted

Ongoing Partnership Projects with EU Companies (CONT'D

- Partnership With Eads-Deutschland for Detail Parts Manufacturing (TAI)
  - Partnership with EADS-Deutschland
  - Manufacturing of 21,538 parts
  - 17,480 parts submitted
- Manufacturing of Cn-235 Landing Gear and Engine Carrier (TAI)
  - Partnership with EADS-CASA
  - Manufacturing of landing gear and engine carrier
- MANUFACTURING OF EC-135 REAR DOORS AND ENGINE COWLINGS (TAI)
  - Partnership with Eurocopter
  - 405 sets of order
  - 398 sets submitted
- A400M AIRCRAFT TP400 ENGINE PROJECT (TEI)
  - Partnership with ITP (Industria de Turbo Propulsores SA) from Spain
  - Participated to the program as a Risk and Revenue Sharing Partner with ITP
  - Design responsibility and the sole manufacturer of the following TP400 Engine Modules :
    - Front Bearing Structure
    - Primary Nozzle
    - Special Test Equipment

Ongoing Military Aerospace Projects-1:

- ATTACK AND TACTICAL RECONNAISSANCE HELICOPTER (ATAK)
- A400M TRANSPORT AIRCRAFT
- JOINT STRIKE FIGHTER - JSF
- COAST GUARD HELICOPTER
- CO-PRODUCTION PROJECT OF 30 COUGAR HELICOPTERS
- F-5 A/C AVIONICS AND STRUCTURAL MODERNISATION
- GAINING DEPOT LEVEL MAINTENANCE (DLM) CAPABILITY FOR S-70A BLACKHAWK HELICOPTERS
- MARITIME PATROL & MARITIME SURVEILLANCE AIRCRAFT (MELTEM)

Source: Undersecretariat for Defence Industries

Ongoing Military Aerospace Projects-2:

MARITIME PATROL & MARITIME SURVEILLANCE AIRCRAFT (MELTEM 2)

MARITIME PATROL AND SURVEILLANCE AIRCRAFT (MELTEM-3)

PEACE EAGLE - TURKISH AIRBORNE EARLY WARNING & CONTROL (TAEW&C)

PRIMARY AND BASIC TRAINER- BTEU

S-70B SEA HAWK HELICOPTER PROCUREMENT

ELECTRO-OPTICAL (EO) RECONNAISSANCE AND SURVEILLANCE SATELLITE SYSTEM PROJECT

HELICOPTER ELECTRONIC WARFARE PROJECTS

X-BAND TURKISH MILITARY SATELLITE COMMUNICATIONS SYSTEM (TMSCS)

Major aerospace capabilities in Turkey:

- CN-235 Light Transport / Maritime Patrol / Surveillance Aircraft (TAI)
- Component and Parts Manufacturing (TAI)
- Cougar AS-532 Helicopter (TAI)
- F-16 Fighting Falcon Modernisation (TAI)
- Aircraft/Helicopter and Gas Turbine Parts (TEI)
- Aircraft / Helicopter Structural and Aircraft Engine Components (ALP Aviation)
- F-4 E IFF MODE-4 Receiver / Transmitter (GATE Electronic)
- Open Skies Aircraft Integration Services (HAVELSAN)
- SF-260D Primary Trainer Aircraft (TAI)
- Tests of Aircraft Engines and Parts (GE Marmara Technology Center)
- X-BAND Satellite Communication System (ASELSAN)

Thank you for your attention