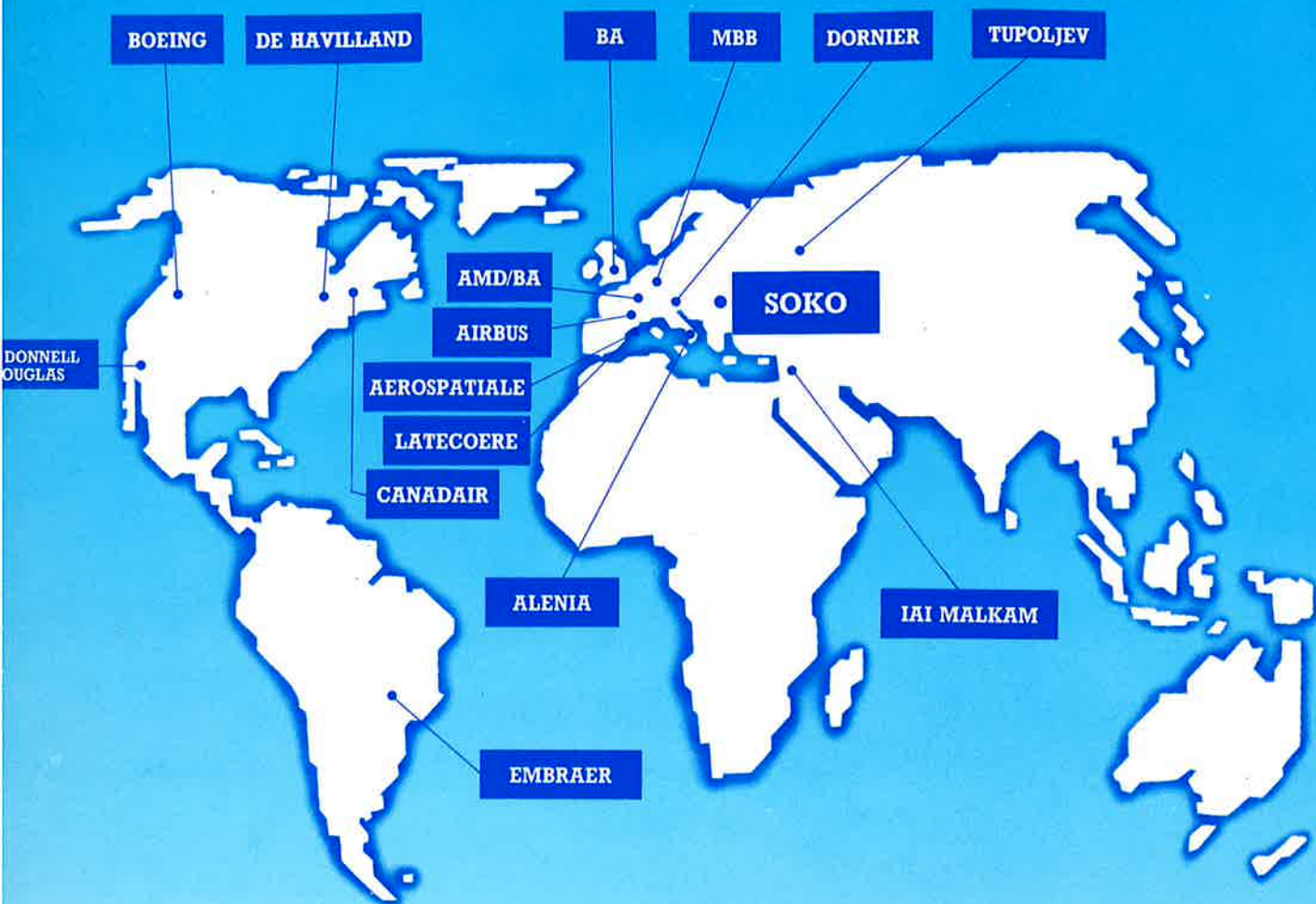




SOKO AIRCRAFT INDUSTRY

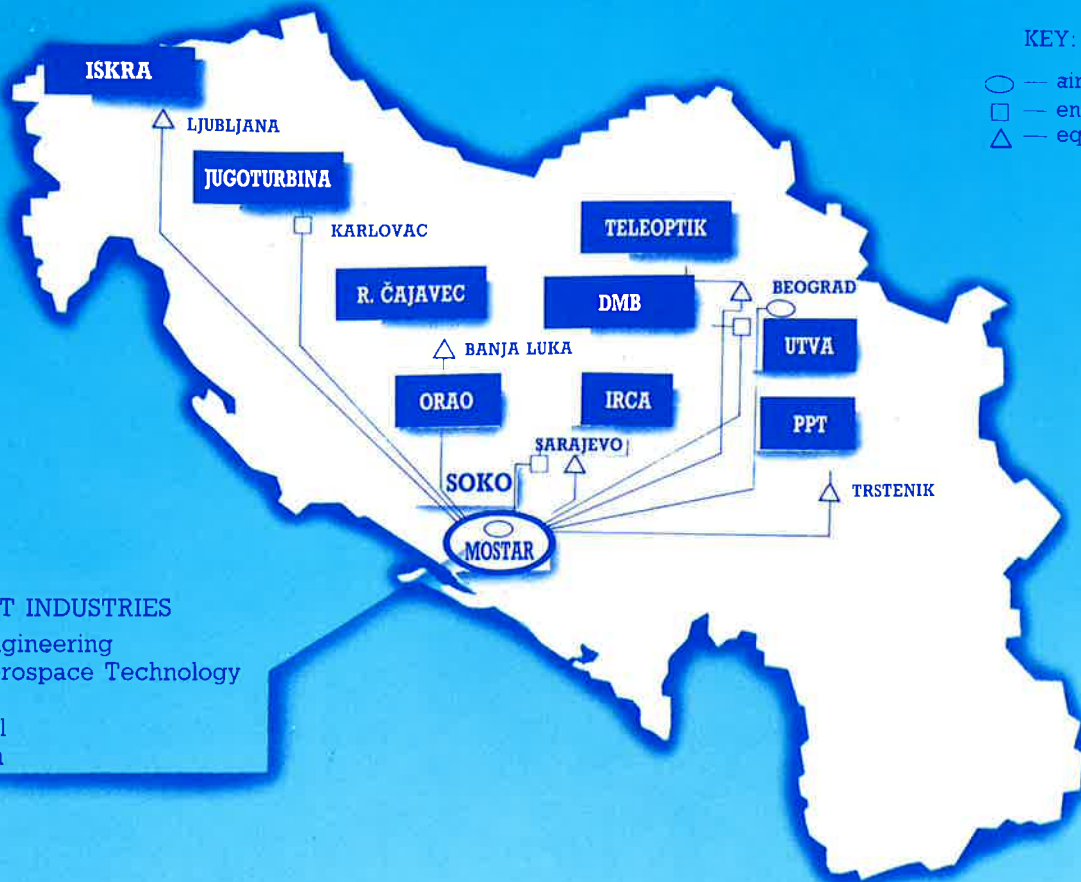
Presence of SOKO in the international aerospace cooperation field



Yugoslav aerospace industry

KEY:

- — aircraft structure
- — engines
- △ — equipment



SOKO AIRCRAFT INDUSTRIES

- Commerce engineering
- Institute of Aerospace Technology
- Production
- Quality control
- Administration



SOKO AIRCRAFT INDUSTRY

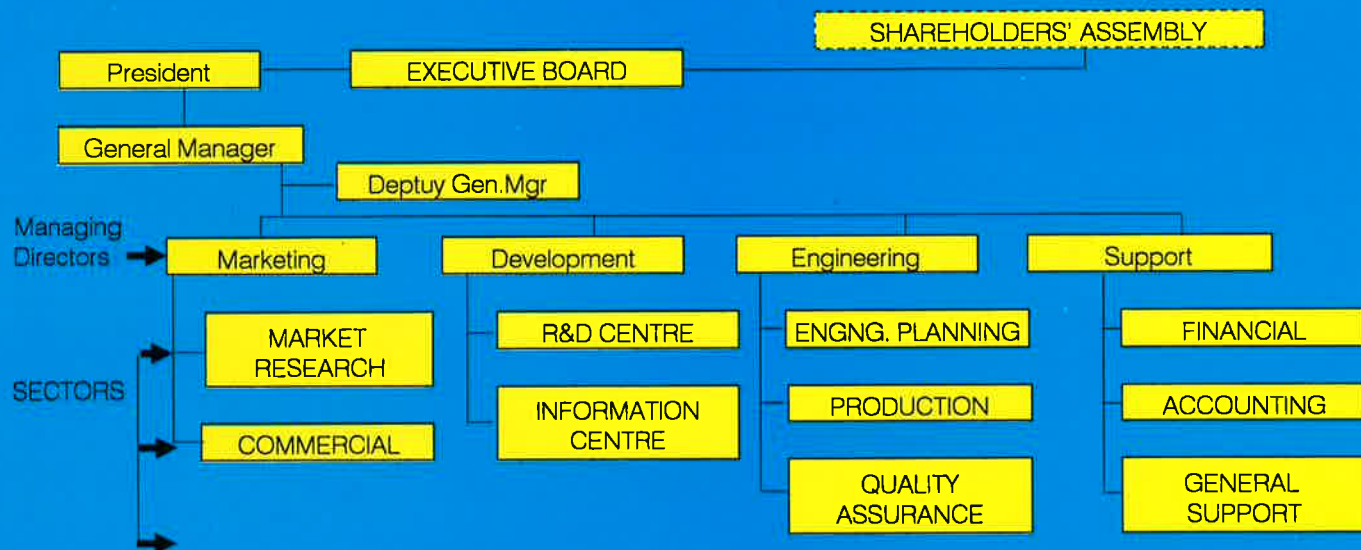


THE COMPANY

Soko Aircraft Industry Ltd. (Preduzeće Soko Vazduhoplovna Industrija D.D.) is the leading Yugoslav aircraft manufacturer, responsible for almost all Yugoslav military aircraft production programs in the last three decades, and also deeply involved in industrial co-operation with numerous European and US civil aircraft manufacturers. The company, now employing some 3500 people at its Mostar facilities, has celebrated its 40-th anniversary in 1990. This year also happens to be marking an important milestone for the company, which from 1991, becomes a mixed-ownership shareholders' enterprise with an initial capital of \$ 110 million and an increasing proportion of privately-owned shares. The company is now organised along the following scheme:

the SA 342 Gazelle helicopter, plus a wide range of components for international civil aircraft. International co-operation represents a steadily growing segment of the company's activities, assuming an important place in its plans for the future in a world of shrinking military aerospace market.

Production capacities are available for fabrication of sheet metal structures, chemical milling, bonding, metal and composite honeycomb structures, GFRP, Kevlar and CFC laminate components, along with a large and modern NC machining workshop. Appropriate quality control procedures have been approved by leading international civil aircraft manufacturers.



Funded in 1950, and initially engaged in military aircraft overhaul and component manufacture, Soko started its first final assembly line in 1957. Through the following 30 years, 154 piston-engined and more than 500 jet-propelled military trainer and attack aircraft rolled off the assembly lines in Mostar, along with 125 licence-produced helicopters. Current production comprises the twin-jet Orao ground-attack aircraft, the G-4 Super Galeb jet trainer and

Though its military aircraft have been designed by the Aeronautical Institute in Belgrade, Soko has also developed comprehensive design capabilities, comprising advanced structural analysis and CAD, covering all types of airframe structures. This enables the company to participate in or assume responsibility for the design of components and structural assemblies within the scope of international co-operation or partnership in new projects.



G-4 SUPER GALEB

Basic application of the aircraft is for basic and advanced training of pilots. It is also designed for performing combat missions in the close-support and auxiliary fighter roles.

TECHNICAL DATA:

Engine: Rolls-Royce Viper MK 632-46	17.9 kN
Maximum speed (at 6000m)	910 kph (0.8 M)
Rate of climb (2 crew, full internal fuel)	30 m/s
Ceiling (absolute)	15000 m
Range (with aux. fuel tanks, at 12000 m)	2600 km
Radius of action:	
4 x 250 bombs, lo-lo-lo	390 km
hi-lo-hi	510 km
Aircraft empty weight	3250 kg
Internal fuel capacity	1720 l
External fuel	710 l

AIRCRAFT EQUIPMENT

The aircraft is equipped for IFR flying. Typical avionics set comprises VHF/UHF COM, VOR/ILS, marker beacon receiver, DME, ADF, radio altimeter and RWR.

ARMAMENT

The aircraft is capable of performing gunnery, rocketry and bombing missions. Various configurations of ordnance can be carried on four underwing pylons stressed for 500 kg (inbd.) and 350 kg (outbd.). A 23-mm twin-barrel cannon with 200 rounds is accommodated in an underfuselage pod. The aircraft is equipped with a gyroscopic gun-bomb-rocket sight. Upgraded combat version equipped with HUD/WAC, AAM, ASM and expanded range of other weaponry is in development.

SA342L GAZELLE

TYPE:

Light general-purpose helicopter, manufactured under Aerospatiale licence, available in the following versions:

- Anti-tank,
- Medical evacuation,
- Battlefield reconnaissance version.

TECHNICAL DATA

Maximum take-off weight	2000 kg
Maximum speed	310 kph
Main rotor diameter	10.5 m
Overall length, rotors turning	11.972 m
Height	3.168 m
Winch lifting capacity	136 kg
Cruising speed	232 kph
Endurance	4.6 h
Radius of action	770 km

EQUIPMENT

Standard flight and navigational IFR instruments, various NAV/COM equipment, autopilot and gyro stabilized sight.

ARMAMENT

Four Malutka wire-guided anti-armour missiles, Two Strela (SA-7) light AAMs (in combination with ATM), or two 57-mm FFAR pods.



ORAO

The aircraft was designed for fighter-bomber support of ground troops as its chief mission. These tasks are envisaged to be performed at low altitudes and at high trans-sonic speeds. Additional roles comprise tactical reconnaissance and operational conversion training (2-seat version).

TECHNICAL DATA:

Power plant two Rolls-Royce Viper MK 633-41 turbojet engines developing total 43.2 kN (9700 lbs) of static thrust.

Aircraft empty, equipped	5358 kg
Maximum take-off weight	11250 kg
Maximum weight of external stores	2800 kg
Maximum fuel capacity	3092 lit
Wing span	9.6 m
Aircraft length without Pitot tube	14.90 m
Aircraft height	4.45 m
Maximum speed:	

at 7000 m altitude	1012 kph
at sea level	1160 kph
Rate of climb	38 m/s
Service ceiling	13500 m
Combat radius, lo-lo-hi, two rocket pods, 6x100 kg bombs, one 500 lit. aux fuel tank, 10 min. over target	450 km

ELECTRONIC EQUIPMENT

The aircraft is equipped with VHF/UHF COM, AHRS, ADF, VOR/ILS, marker beacon receiver, DME, radio altimeter and RWR.

ARMAMENT

The aircraft's four underwing weapon pylons are stressed to 500 kg, and the underfuselage station to 800 kg. This and the inboard underwing pylons are plumbed for the carriage of auxiliary fuel tanks. Two 23-mm twin-barrel cannon, with 200 rounds of ammo. each, are installed in the fuselage. Various combinations of weaponry, including AGM-65B Maverick ASMs, can be carried on the weapon pylons. The fire-control system is based on a Thomson VE-120 HUD.



EMERGENCY EXIT DOOR BOEING 757



RUDDER SHELL AIRBUS 300/310/330/340



SPONSON SUPER PUMA AS 332 MK II



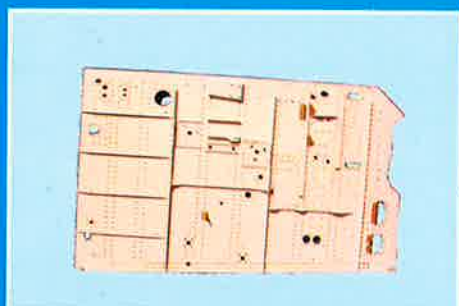
LATERAL CONTROL BOX BOEING 737

SOKO as a successful subcontractor of the following companies:

- AEROSPATIALE
- AIRBUS
- ALENIA
- BOEING
- DORNIER
- EMBRAER
- IAI MALKAM
- KOREANAIR
- LATECOERE
- MARCEL DASSAULT
- MBB
- MC DONNELL DOUGLAS
- SOCEA-SOGERMA
- UAPK



LANDING GEAR ATTACHEMENT BRACKET
ATR 42/72



KEEL INSTALLATION MD 80



BULKHEAD C46 AIRBUS 320



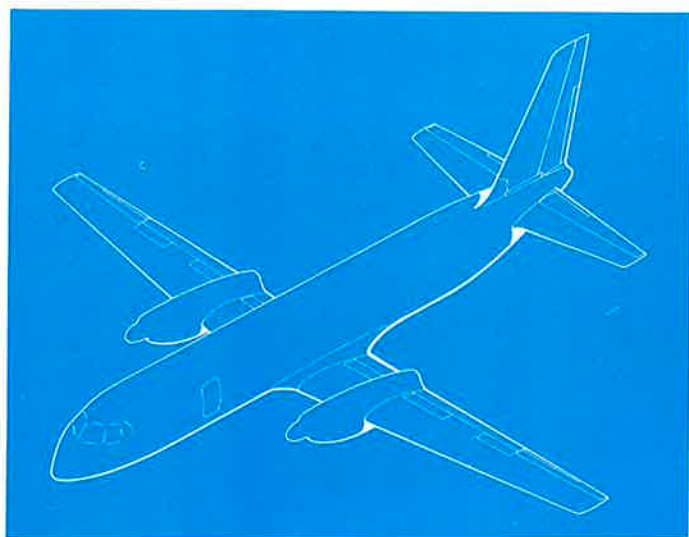
ENGINE TROLLEY AIRBUS 340



NC MACHINING SHOP



FUSELAGE FRAMES ATR-42



IL-114

CUSTOMER

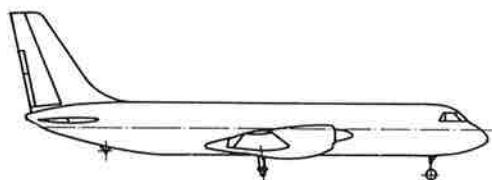
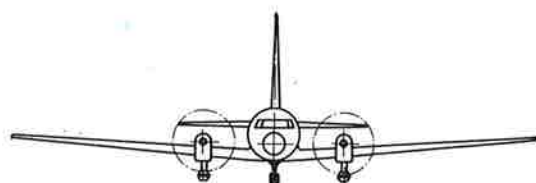
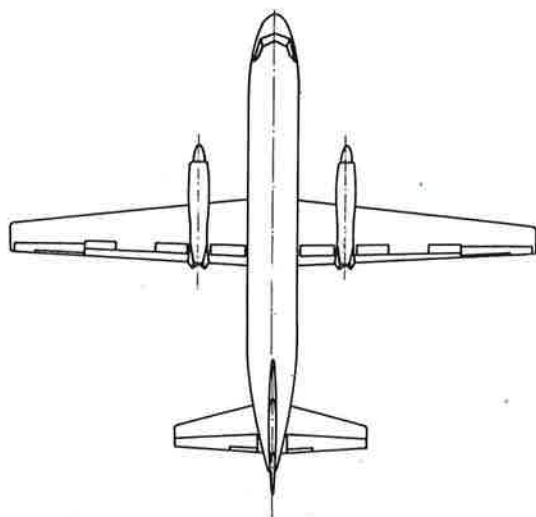
Avioexport — Moskva
Iljušin

DESCRIPTION

The model has been made of metal-wood-plastics in scale 1:2. It has pressure system, electrical and hydraulic systems.

The model has been made for testing in aerodynamic tunnel as follows:

- General aerodynamic characteristics
- Checking hinge moments of control surfaces
- Checking distribution of effective pressure on control surfaces
- Checking distribution of pressure on model surface
- Checking propeller stress
- Checking performance of air intake
- Checking impact of icing imitation on aerodynamic characteristics
- Checking streamlines spectrum on model



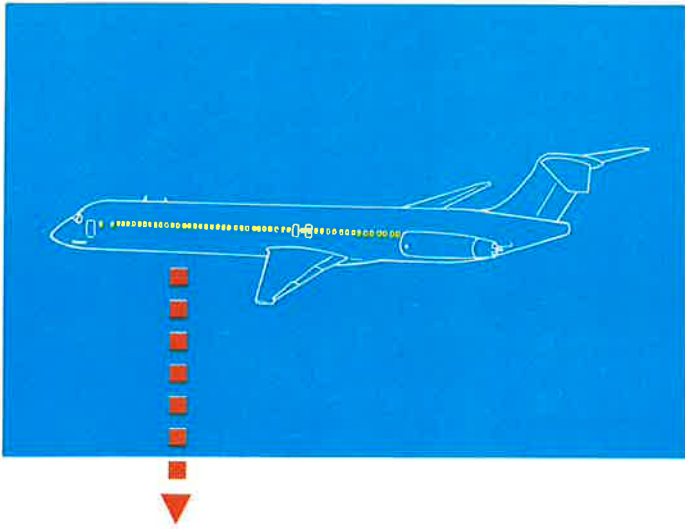


IL-114

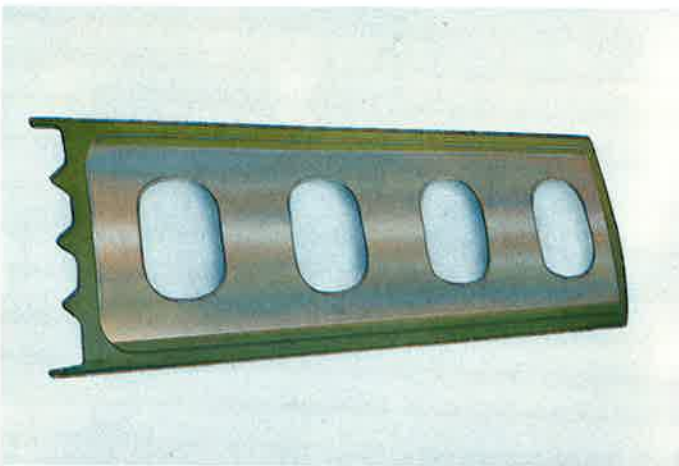


PROGRAM	
▶ Beginning design	august 1988.
▶ First delivery	29. 6. 1990.
▶ Quantity to be delivered	1

Adress:
Soko Aircraft industry
88000 Mostar
Rodoč b.b.
Yugoslavia
Telephone: 088/21-692 088/53-749
Telex: 46-322, 46-180
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MD-80 Window belts



CUSTOMER

Alenia

DESCRIPTION

Soko fabricates variety of window belts from clad sheet metals of high quality





MD-80 Window belts



PROGRAM	
▶ First delivery	25. 7. 1989
▶ Quantity to be delivered	50 s/s

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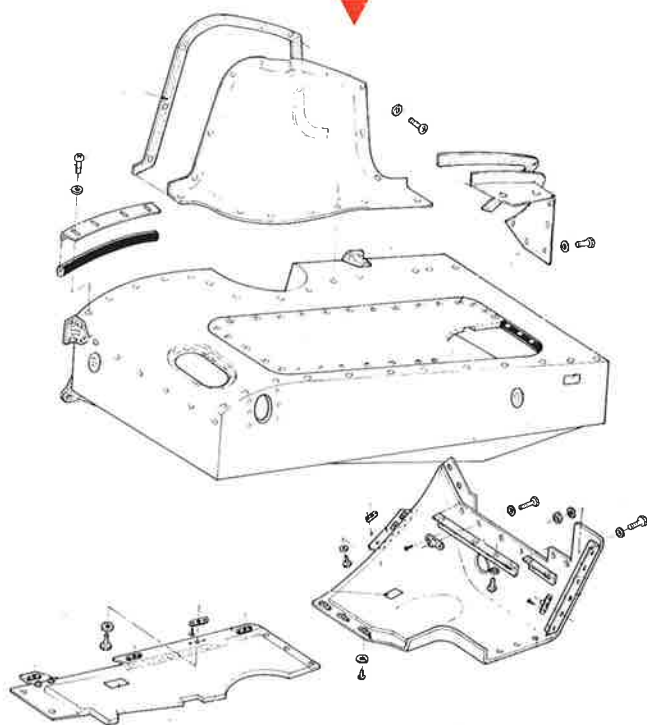
SUPER PUMA MK II AS-332 SPONSONS

CUSTOMER

Aerospatiale

DESCRIPTION

Sponson has several variants contingent on purpose. It is made of kevlar/epoxy and nomex sandwich, and of kevlar/epoxy laminates. Size: 2.7 m × 1 m × 1 m



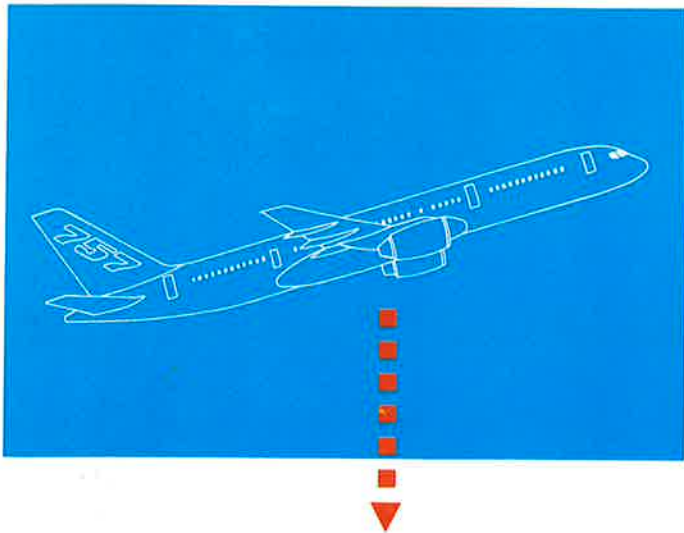


SUPER PUMA MK II AS-332 SPONSONS

PROGRAM	
▶ Beginning design	1988.
▶ First delivery	1990.
▶ Quantity to be delivered	150 s/s

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BOEING-757

Emergency exit door



CUSTOMER

Boeing Commercial

DESCRIPTION

Four emergency exit doors per aircraft. Metal construction (sheet-metal parts and machine parts) with locking mechanism.





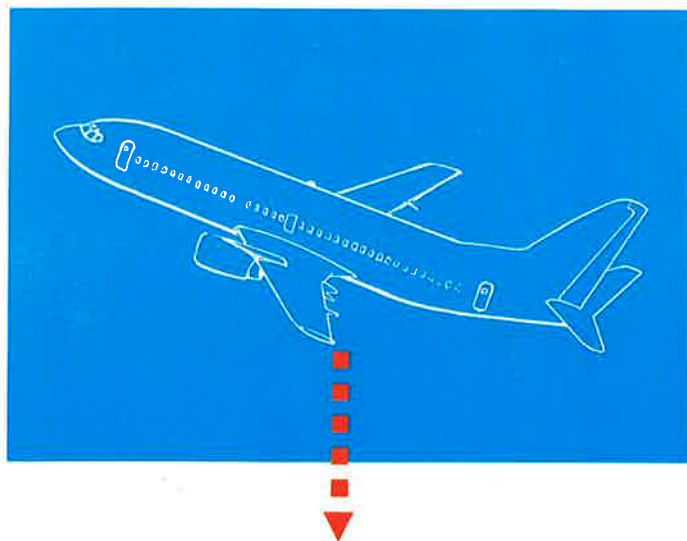
BOEING-757 Emergency exit door



PROGRAM	
▶ First delivery	1990.
▶ Quantity to be delivered	62 s/s

Adress:
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BOEING-737

Aileron hinge box

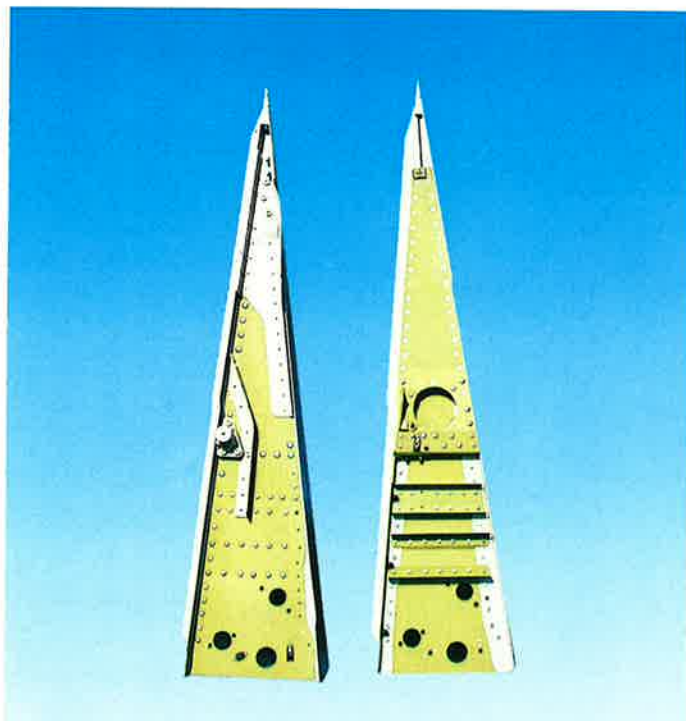


CUSTOMER

▼
Boeing Commercial

DESCRIPTION

▼
Aileron hinge box assembly consists of sheet metal parts, machine parts and glass laminated parts





BOEING-737

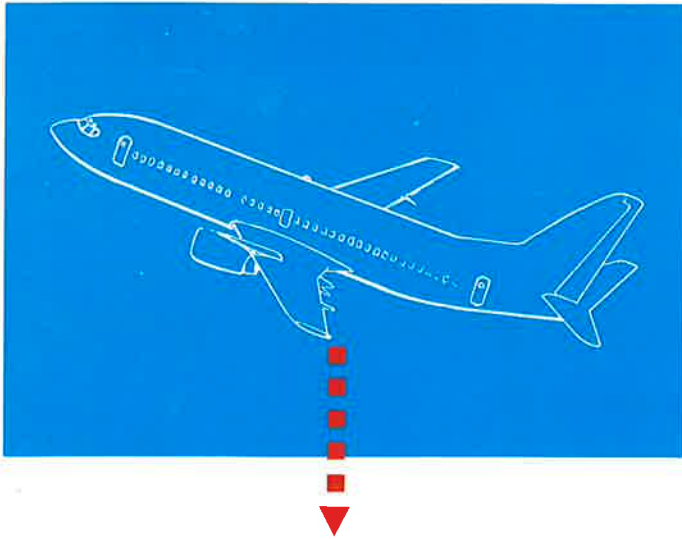
Aileron hinge box



PROGRAM	
► First delivery	1983.
► Quantity to be delivered	458 s/s

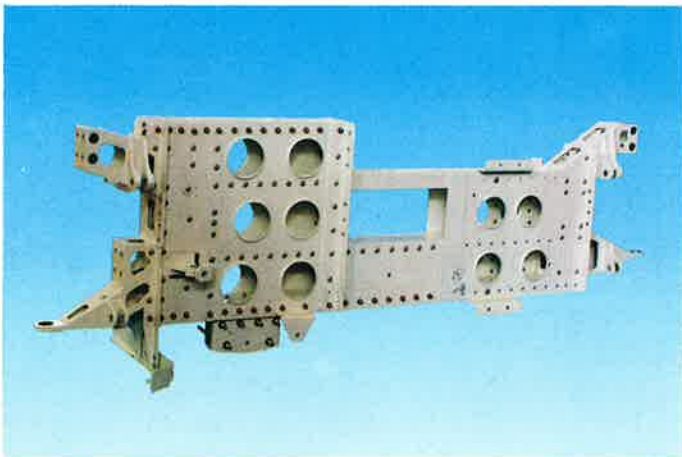
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BOEING-737

Lateral control box



CUSTOMER

▼
Boeing Commercial

DESCRIPTION

▼
Lateral control box is designed as conventional metal construction of 1100 × 460 mm dimension.





BOEING-737 Lateral control box



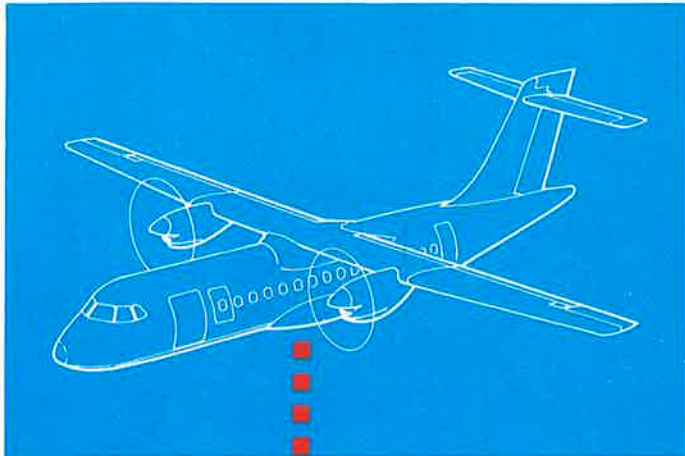
PROGRAM	
▶ First delivery	1984.
▶ Quantity to be delivered	186 s/s

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ATR-42



CUSTOMER

Alenia

DESCRIPTION

MLG platform and frames made by NC machining





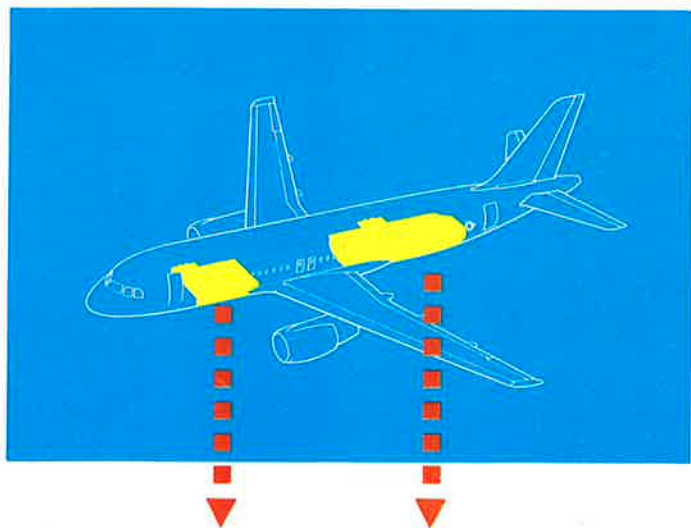
ATR-42



PROGRAM		
▶	First delivery	1987.

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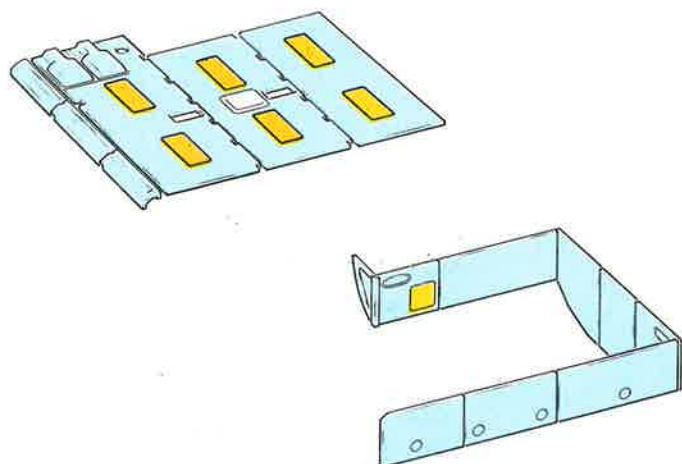
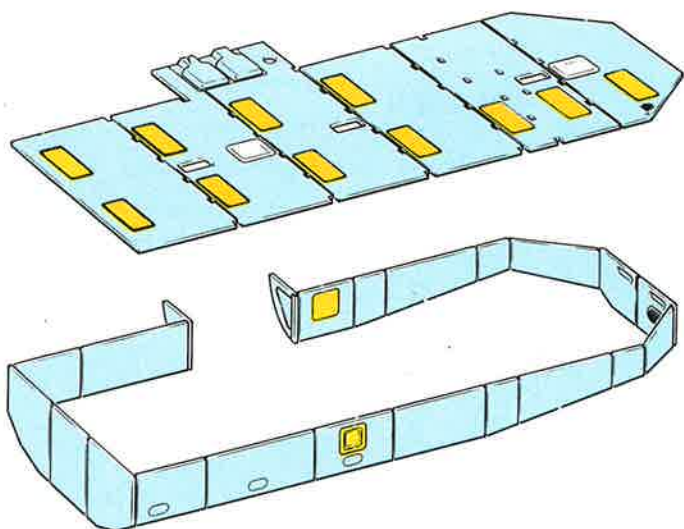
A-320 Cargo compartment

CUSTOMER

Airbus industrie by Dornier

DESCRIPTION

Production of assemblies made of laminates and sandwich panels based on glass / phenolic prepreg



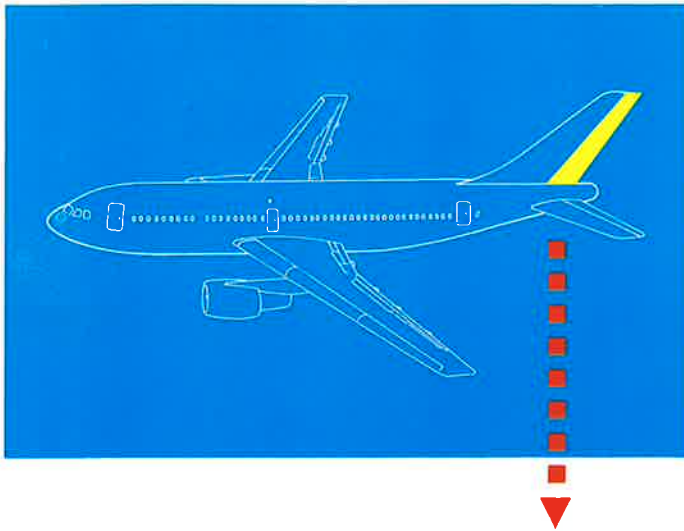


A-320 Cargo compartment

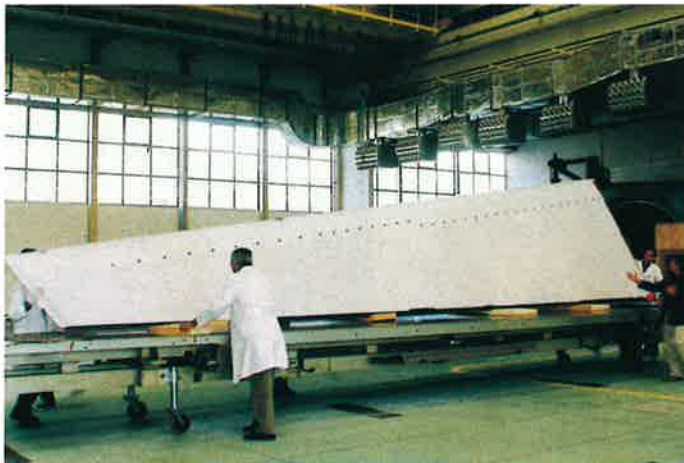
PROGRAM	
▶ First delivery	1988.
▶ Quantity to be delivered	500 s/s

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A-300/310 A-330/340 Rudder shell



CUSTOMER

DA Hamburg

DESCRIPTION

Soko completely fabricates
9,5 x 2 x 1 meter rudder shell from
laminates and sandwich panels
based on carbon and glass fibers.





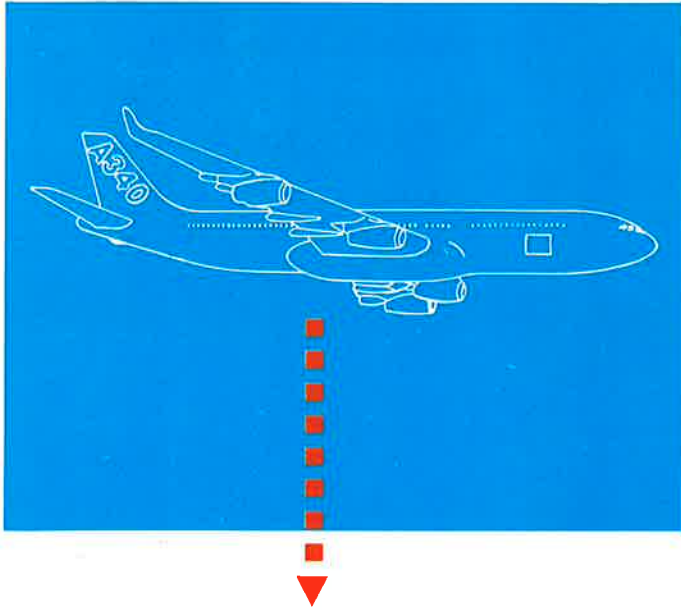
A-300/310 A-330/340 Rudder shell



PROGRAM	
▶ First delivery	1990.
▶ Quantity to be delivered	200 s/s

Adress:
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A-330/340 Section T 15 upper shell



CUSTOMER

▼
Socea

DESCRIPTION

▼
Fabrication of all sheet-metal and machined parts with tooling and design engineering.
The contract is based on joint risk.





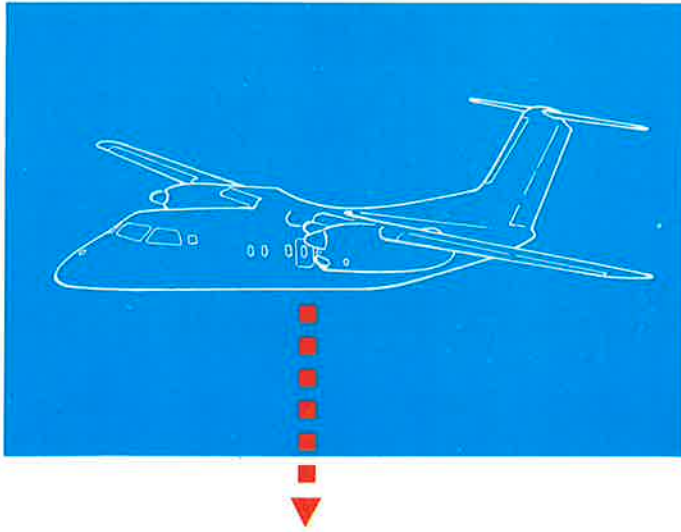
A-330/340 Section T 15 upper shell



PROGRAM	
▶ First delivery	31. 5. 1990.
▶ Quantity to be delivered	600 s/s

Adress:
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DASH 8-100/-300 Emergency exit door typ II

CUSTOMER

De Havilland Canada

DESCRIPTION

Emergency exit door is designed as metal construction (sheet metal parts and machine parts) with locking mechanism.



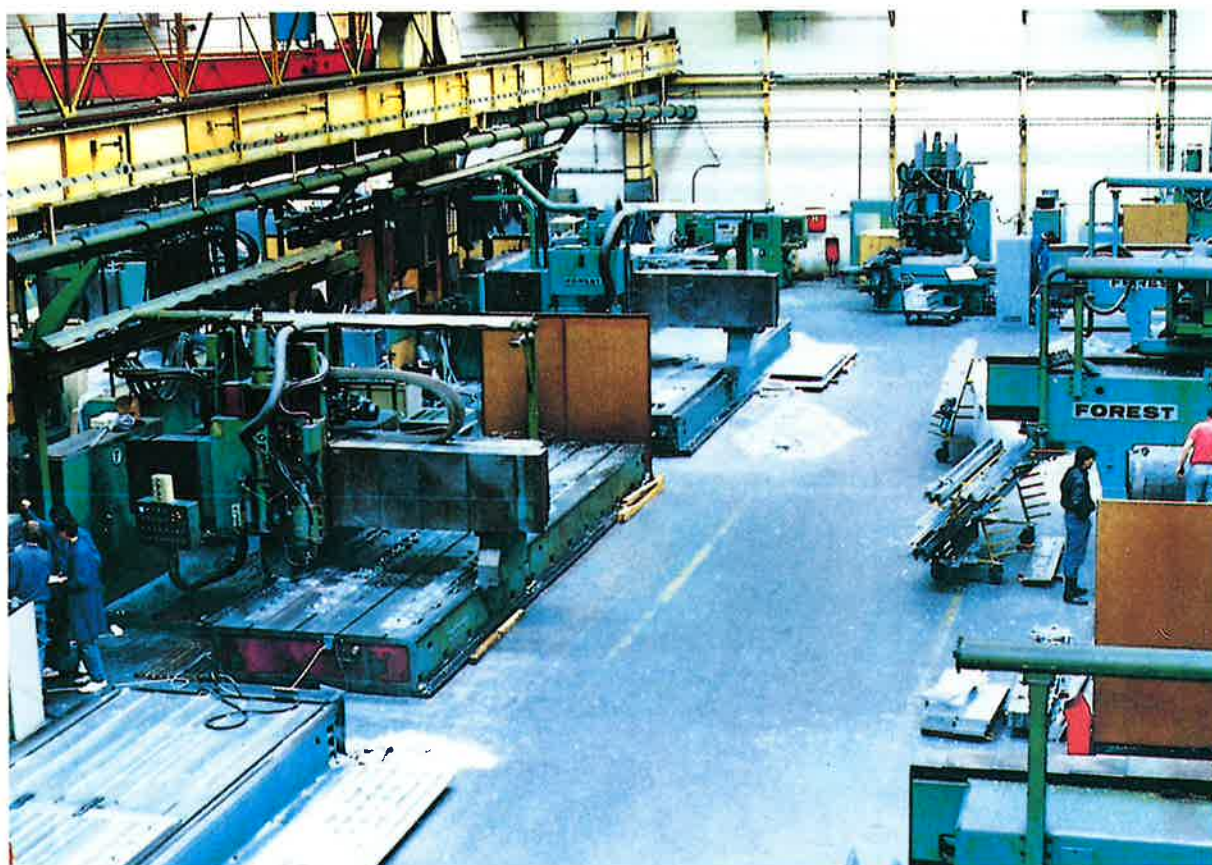


DASH

8-100/-300

Emergency exit

door typ II



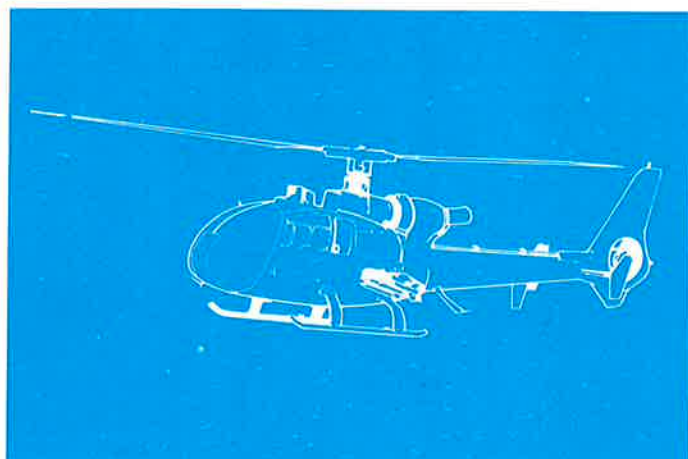
PROGRAM	
▶ First delivery	April 1985.
▶ Quantity to be delivered	> 260 units

Adress:
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GAZELLE SA-341/342



CUSTOMER

▼
Aerospatale, Yugoslavia air forces

DESCRIPTION

▼
Production of

- Hinges
- Central structures
- Tail cones
- Horizontal stabilizer
- All doors
- Cockpit windshield
- Lateral stabilizers

We have complete helicopter
production, too





GAZELLE SA-341/342

PROGRAM	
▶ Beginning design	1971.
▶ First delivery	1974.
▶ Quantity to be delivered	300

Adress:
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SOKO AIRCRAFT INDUSTRY