



**SD PNA**

**DIRECCION GENERAL DE AERONAUTICA CIVIL  
DIRECCION DE PLANIFICACION  
SUBDIRECCION DE PLANIFICACION DE NAVEGACION AEREA**

**11<sup>TH</sup> INTERNATIONAL FLIGHT INSPECTION SYMPOSIUM**

**MR. JULIO SANTOS - 11<sup>TH</sup> IFIS CHAIRMAN**

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SANTIAGO DE CHILE, 24 AGOSTO 2000

ES UN ALTO HONOR PARA EL DIRECTOR EJECUTIVO DEL 11° SIMPOSIO INTERNACIONAL DE INSPECCION EN VUELO SALUDAR A LA COMUNIDAD AERONAUTICA INTERNACIONAL Y PRESENTAR LA PUBLICACION FINAL DE LAS SESIONES TECNICAS DEL SIMPOSIO INTERNACIONAL IFIS2000 REALIZADO EN SANTIAGO DE CHILE ENTRE EL 05 Y EL 09 DE JUNIO DE 2000, AUSPICIADO POR LA "DIRECCION GENERAL DE AERONAUTICA CIVIL - D.G.A.C."

IT IS A GREAT HONOR FOR 11<sup>TH</sup> INTERNATIONAL FLIGHT INSPECTION SYMPOSIUM CHAIRMAN TO GREET THE INTERNATIONAL AERONAUTICAL COMMUNITY AND IS PROUD TO PRESENT THE FINAL PROCEEDINGS CORRESPONDING TO THE TECHNICAL SESSIONS FROM THE INTERNATIONAL SYMPOSIUM - IFIS2000, THAT WAS HELD IN SANTIAGO-CHILE FROM 05 TO 08 JUNE 2000, UNDER THE AUSPICES OF THE "DIRECCION GENERAL DE AERONAUTICA CIVIL-G.G.A.C."

PROPIEDAD INTELECTUAL N°

Registro Propiedad Intelectual  
Inscripción N° 115938

24 AGO 2000

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SANTIAGO - CHILE

**JULIO SANTOS  
11<sup>TH</sup> IFIS CHAIRMAN**

# FINAL PROCEEDINGS



## 11<sup>TH</sup> INTERNATIONAL FLIGHT INSPECTION SYMPOSIUM

*From earth to space: The millennium challenge*

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JUNE 5-9, 2000 SANTIAGO, CHILE

# **FINAL PROCEEDINGS**

**11<sup>th</sup> INTERNATIONAL  
FLIGHT INSPECTION  
SYMPOSIUM**

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JUNE 05 - 09, 2000 - SANTIAGO, CHILE



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# 11th INTERNATIONAL FLIGHT INSPECTION SYMPOSIUM

## A G E N D A

**SANTIAGO CROWNE PLAZA HOTEL  
JUNE 05 - 09, 2000 - SANTIAGO, CHILE**

### **TOPICS**

- 1.- PROCEDURAL ASPECTS AND PROBLEMS
- 2.- SPECIAL MILITARY CONSIDERATIONS
- 3.- NEW TECHNICAL DEVELOPMENTS
  - A.- Flight Inspection Systems
  - B.- Nav aids and facilities
- 4.- GNSS FLIGHT INSPECTION
- 5.- FINANCIAL AND ORGANIZATIONAL ASPECTS

### **MONDAY, JUNE 05**

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#### **REGISTRATION**

- 08:00 - 17:00      Registration
- 07:30 - 17:30      Exhibition Hall - Salón Atacama
- 07:30 - 08:30      Continental breakfast - Exhibition Hall - Salón Atacama
- 19:00 - 22:00      Official Symposium Opening

Opening Remarks

**Mr. Dieter Hielscher**

ICASC Chairman  
Germany

**Mr. Mario Avila Lobos**

General de Aviación  
Director General de Aeronáutica Civil  
Chilean Civil Aviation Authority

Welcome Reception - Crowne Plaza Hotel - Salón Constitución  
Sponsored by Parker Hannifin Corporation  
Guest Speaker: **Mr. George Matre**  
Business Development - Electronic System Division



## **TUESDAY, JUNE 06**

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### **DAY 1**

- 07:30 - 17:00      Registration
- 07:30 - 17:30      Exhibition Hall - Sal6n Atacama
- 07:30 - 08:30      Continental breakfast - Exhibition Hall - Sal6n Atacama  
Sponsored by RMS Instruments
- 08:30 - 09:00      Welcome Remarks  
**Mr. Julio Santos**  
11<sup>th</sup> IFIS Chairman  
Chile
- 09:00 - 09:30      Special Presentations
- Mr. Dieter Hielscher**  
The International Committee for Airspace Standards and Calibration  
ICASC Chairman  
Germany
- Mr. John Beddows**  
The ICAO regulations in the field of flight inspection  
ICASC Member  
United Kingdom
- 09:30 - 10:30      **Technical Session N6 1: Procedural Aspects and Problems**  
Panel Moderator  
**Mr. Jim Savage**  
Technical Assistance Program Manager  
FAA - Europe, Africa and Middle East Office (Brussels, Belgium)  
United States
- Position reference for ILS Category III, experience, pitfalls and solutions  
implementing high precision DGPS-RTK*
- Mr. Jostein Trones**  
R & D Manager  
Normarc Flight Inspection Systems AS  
Norway
- Capture effect in ILS receivers*
- Mr. Martin Wills**  
Technical Manager  
Flight Precision Limited  
England



*Magnetic north alignment for VOR station without theodolite*

**Mr. Juan Oswaldo Hernández**

Flight Inspection

Dirección General de Aeronáutica Civil

Colombia

10:30 - 11:00

Coffee Break - Exhibition Hall - Salón Atacama

Sponsored by SAGEM/SFIM Industries

11:00 - 12:00

**Technical Session N° 1: Procedural Aspects and Problems**

Panel Moderator

**Mr. John Beddows**

Engineer - Safety Regulation Group

Civil Aviation Authority

United Kingdom

*Human Factors and Flight Inspection*

**Mr. Howard M. Ryder**

FAA Airspace System Inspection Pilot

United States

**Mr. Chuck Barbeau**

FAA Aviation Safety Inspector

United States

*Flight Inspection and ATC procedures in remote areas - Easter Island and Falkland Island*

**Mr. Humberto Barnachea**

Senior Flight Inspector

Dirección General de Aeronáutica Civil

Chile

**Mr. Julio Santos**

Air Traffic Controller Engineer

Dirección General de Aeronáutica Civil

Chile

**Mr. Collin Chitty**

Director, General Manager

Flight Precision Limited

United Kingdom

12:15 - 13:45

Luncheon - Salón Patagonia

Sponsored by Dirección General de Aeronáutica Civil

Guest Speaker: Mr. Alfredo Guzmán

General de Brigada Aérea (I)

Director Ejecutivo Empresa Nacional de Aeronáutica (ENAER)





14:00 - 15:30

**Technical Session N° 1: Procedural Aspects and Problems**

Panel Moderator

**Christo Van Straaten**

Flight Inspector (Operations)

South African Civil Aviation Authority

South Africa

*ILS quality control referred to national standards and detection of disturbing sources*

**Prof. Dr. Peter Form**

Technical University of Braunschweig

Germany

**Dipl. Eng. Jochen Bredemeyer**

Technical University of Braunschweig

Germany

*Custom reports from standards results*

**Ms. Terry Lynn Collins**

Sierra Data Systems

United States

*Identification of origin and location of ILS and COM frequencies jamming*

**Mr. Gérard Marin**

Flight Inspection Subdivision

Service Technique de la Navigation Aérienne, D.G.A.C.

France

*Problems and solutions for ILS category III and ground measurements - European and US views and perspectives*

**Dr. Eng. Mr. Gerard Greving**

Engineer

NAVCOM Consult

Germany

**Mr. Nelson Sponheimer**

National Resource Engineer for Navigation

Federal Aviation Administration

United States

15:30 - 16:00

Refreshments - Exhibition Hall - Salón Atacama

Sponsored by SAGEM/SFIM Industries

16:00 - 17:20

**Technical Session N° 1: Procedural Aspects and Problems**

Panel Moderator

Mr. Wan Zali Wan Kadir

Pilot/Assistant Director, DCA

Malaysia



*ILS certification requirements*

**Mr. Helmut Kraemer**

Product Manager Nav aids  
DFS Deutsche Flugsicherung GmbH  
Germany

**Mr. Wolfram Steinau**

Project Manager Satellite Navigation  
DFS Deutsche Flugsicherung GmbH  
Germany

*Antenna failure - Reason for false ILS course guidance?*

**Mr. Falk Winter**

Flight Inspector  
Flight Inspection International GmbH (FII)  
Germany

*Methods of computing glidepath characteristics in modern flight inspection systems*

**Mr. Uwe Buchheim**

Flight Inspection  
Aerodata Flugmesstechnik GmbH  
Germany

*Airborne interference investigations - A higher level of safety on earth and in space*

**Mr. James Aviles**

ASR RFI Program Senior Engineer  
Spectrum Policy and Management  
Federal Aviation Administration  
United States

19:00 - 22:30 Special Social event  
Sponsored by Dirección General de Aeronáutica Civil  
Guest Speaker: **Mr. Julio Santos**  
11<sup>th</sup> IFIS Chairman  
Transportation will be available at the entrance of the Hotel.  
Buses will depart at 19:00 hours

## **WEDNESDAY, JUNE 07**

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### **DAY 2**

07:30 - 17:00 Registration

07:30 - 17:30 Exhibition Hall - Salón Atacama



- 07:30 - 08:45 Continental breakfast. Exhibition Hall - Sal3n Atacama
- 08:45 - 09:00 Remarks  
**Mr. Julio Santos**  
11<sup>th</sup> IFIS Chairman  
Chile
- 09:00 - 10:30 **Technical Session N3 2.- Special military considerations**  
Panel Moderator  
**Mr. Onorio Rocca**  
President  
RMS Instruments  
Canada  
  
*Flight Inspection opportunities in a military market*  
**Lt. Col. Mr. Dieter Krach**  
Technical Planning ATC Systems and Flight Inspection  
Bundeswehr Air Traffic Services Office  
Germany
- Technical Session N3 3.- New Technical developments. Flight Inspection systems**  
Panel Moderator  
**Mr. Onorio Rocca**  
President  
RMS Instruments  
Canada  
  
*Real time «On-Board to Ground» curves transmission*  
**Mr. Francois Baste**  
Flight Inspection Sales Manager  
SAGEM/SFIM Industries  
France  
  
*Flight inspection data downlink*  
**Mr. Martyn Wills**  
Technical Manager  
Flight Precision Limited  
England
- 10:30 - 11:45 Fast Food Lunch/Refreshments - Sal3n Patagonia  
Sponsored by RVA Aerospace Systems and Cessna Aircraft Company
- 12:00 - 17:00 Static Flight Inspection Aircraft Display (Santiago's International Airport)  
Visit to DGAC's Flight Inspection Unit  
Visit to WAAS Station (optional)  
Transportation will be available at the entrance of the Hotel.  
Buses will depart at 12:00 hours



## THURSDAY, JUNE 08

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### DAY 3

- 07:30 - 17:00 Registration
- 07:30 - 17:30 Exhibition Hall - Sal6n Atacama
- 07:30 - 08:30 Continental breakfast. Exhibition Hall - Sal6n Atacama  
Sponsored by RMS Instruments
- 08:30 - 08:45 Remarks  
**Mr. Julio Santos**  
11<sup>th</sup> IFIS Chairman  
Chile
- 09:00 - 10:40 **Technical Session N6 3.- New Technical developments. Flight Inspection systems**  
Panel Moderator  
**Mr. Thomas Accardi**  
FAA - AVN Director  
United States
- Direct antenna current measurements process of image type glide slope arrays*  
**Mr. Stanley Bradley**  
National Engineering  
Federal Aviation Administration  
United States
- Design considerations in instrumentation for flight inspection - data acquisition systems and graphic printers, architectures, operating systems*  
**Mr. Gerardo Noriega**  
Vice President, R & D Manager  
RMS Instruments  
Canada
- Chile's new flight inspection equipment*  
**Mr. Roy Vousden**  
President  
RVA Aerospace Systems Limited  
Canada
- Flight checking of GPS-Based Non-Precision Approaches*  
**Dr. Eng. Mr. Dirk Brunner**  
Senior Flight Inspector  
Flight Inspection International  
Germany



**Technical Session N° 3.- New Technical developments. Nav aids and Facilities**

Panel Moderator

**Mr. Thomas Accardi**

FAA - AVN Director

United States

*Automatic Flight Inspection and Evaluation of Curved Approaches*

**Mr. Ronald Bueter**

Principle Systems Engineer

Parker Hannifin Electronic Systems Division

United States

10:40 - 11:10

Coffee Break - Exhibition Hall - Sal6n Atacama

11:10 - 12:10

**Technical Session N° 3.- New Technical developments. Nav aids and Facilities**

Panel Moderator

**Mr. Mel King**

Systems Engineer - Flight Inspection

Airways Corporation of New Zealand

New Zealand

*The next generation flight inspection system*

**Mr. Uwe Schramm**

Flight Inspection

Aerodata Flugmesstechnik GmbH

Germany

**Mr. Stefan Jagieniak**

Flight Inspection

Aerodata Flugmesstechnik GmbH

Germany

*ILS instrument landing system (ILS) solutions for 2000 and beyond*

**Mr. John H. Johnson**

Engineering Manager

Watts Antenna Company

United States

**Mr. Chester B. Watts, Jr.**

President

Watts Antenna Company

United States

*Recent advances and new results of numerical simulations for nav aids and landing systems*

**Dr. Eng. Mr. Gerhard Greving**

Engineer

NAVCOM Consult

Germany



12:15 - 13:45

Luncheon. Salón Patagonia  
Sponsored by LITTON Systems Canada  
Guest Speaker: **Mr. Peter Barr**  
Marketing Manager

14:00 - 15:20

**Technical Session N° 3: New Technical Developments. Nav aids and Facilities**

Panel Moderator  
**Prof. Dave Powell**  
Stanford University  
United States

*Transition to CNS/ATM in the CAR/SAM regions*

**Mr. Paulo Hegedus**  
Regional Director  
ICAO Lima, Perú

*Application of specialized software - predicting the effects of structures and locating multipath sources at navigation facilities*

**Mr. David Quinet**  
Program Engineer  
Avionics Engineering Center, Ohio University  
United States

**Mr. Nelson Spohnheimer**  
National Resource Engineer for Navigation  
Federal Aviation Administration  
United States

*An integrity concept for GPS phase ambiguity software as position reference for flight inspection*

**Dr. Mr. Thomas Boelow**  
Flight Inspection  
Aerodata Flugmesstechnik GmbH  
Germany

**Dr. Mr. Manfred Haverland**  
Flight Inspection  
Aerodata Flugmesstechnik GmbH  
Germany

**Mr. Stefan Jagieniak**  
Flight Inspection  
Aerodata Flugmesstechnik GmbH  
Germany

**Ms. Dr. Elizabeth Cannon**  
Professor, Geomatics Engineering  
The University of Calgary  
Canada



*Five years of operation with VP-DGPS*

**Mr. Jacques Davadant**

Head of R & D Flight Inspection Subdivision  
Service Technique de Navigation Aerienne, D.G.A.C.  
France

15:20 - 15:50 Refreshments - Exhibition Hall - Salón Atacama

15:50 - 17:00 **Technical Session N° 4: GNSS Flight Inspection**

Panel Moderator

**Mr. Dieter Hielscher**

DFS Deutsche Flugsicherung GmbH  
Germany

*Flight Inspection in the new Millennium*

**Mr. Curt Keedy**

Aviation Systems Standards  
Federal Aviation Administration  
United States

*Genesis of a new system WAAS for the twenty-first century*

**Mr. Jim Snow**

AVN GPS Program Manager, Aviation System Standards  
Federal Aviation Administration  
United States

*GPS signal quality and interference monitoring in Italy: early experiences and results*

**Mr. Sileno Goedicke**

Flight Inspection Systems Manager  
ENAV - Flight Inspection Department  
Italy

19:15 - 23:00 Dinner Banquet  
Sponsored by Aerodata Flugmesstechnik GmbH  
Guest Speaker: Mr. Manfred Haverland  
Managing Director

Transportation will be available at the entrance of the Hotel.  
Buses will depart at 19:00 hours

## **FRIDAY, JUNE 09**

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### **DAY 4**

07:30 - 12:30 Exhibition Hall Open - Salón Atacama



07:30 - 08:30 Continental breakfast. Exhibition Hall - Sal3n Atacama

08:30 - 09:00 Remarks

**Mr. Julio Santos**  
11<sup>th</sup> IFIS Chairman  
Chile

09:00 - 10:20 **Technical Session N3 4: GNSS Flight Inspection**

Panel Moderator  
**Mr. Joseph Doubleday**  
FAA - AVN Deputy Director  
United States

*Chilean experience with the Wide Area Augmentation System*

**Mr. Humberto Barnachea**  
Senior Flight Inspector  
Direcci3n General de Aeron3utica Civil  
Chile

*Flight Inspection of regional GPS satellite based augmentation systems (SBAS), issues and concerns*

**Dr. Robert Loh**  
Innovative Solutions International (ISI)  
United States

**Mr. Jason Nelsen**  
Innovative Solutions International (ISI)  
United States

*From GPSNPA to SCAT-1 to LAAS*

**Mr. Thomas Fischer**  
Software Group Manager  
Sierra Data Systems  
United States

*Airfield Initiative*

**Mr. Michael Morgan**  
Aeronautical Department  
National Imagery and Mapping Agency  
United States

10:20 - 10:50 Coffee Break - Exhibition Hall - Sal3n Atacama

10:50 - 11:30 **Technical Session N3 5: Financial and Organizational Aspects**

Panel Moderator  
**Mr. Asbjorn Madsen**  
Manager Production and QA  
Normarc Flight Inspection Systems AS  
Norway





*FAA's new centralized flight monitoring and scheduling system*

**Mr. Alex Kwartiroff**

Technical Team Leader, Flight Inspection  
Parker Hannifin Electronic Systems Division  
United States

*Successful business strategy in flight inspection - the management accounting perspective*

**Mr. Tony Dart**

Director Technical Services  
Chartered Institute of Management Accountants  
United Kingdom

11:30 - 12:00

**Invitation - Twelfth International Flight Inspection Symposium**

**Mr. Sileno Goedicke**

Flight Inspection Systems Manager  
Ente Nazionale di Assistenza al Volo - ENAV  
Italy

12:00

**Closing**

Mr. Julio Santos  
11<sup>th</sup> IFIS Chairman  
Chile