Introductory Course Books On

STRAPDOWN INERTIAL NAVIGATION SYSTEMS

Paul G Savage

Strapdown Associates, Inc.

From 1981 to 2009, Strapdown Associates, Inc. (SAI) provided its four and a half day **Introductory Course On Strapdown Inertial Navigation Systems** to the general public in Minneapolis-Minnesota and on-site at contracting host facilities. Course handout books by the course instructor Paul G Savage are now available for purchase from SAI:

• **Introduction to Strapdown Inertial Navigation Systems -** 712 page paperback "Yellow Book" containing the Introductory Course presentation slides with accompanying detailed text descriptions. This book **is** the Introductory course. It addresses the systems, sensor, and software aspects of strapdown inertial navigation system design, Kalman filter aiding, performance analysis, and test. The book can be readily comprehended by engineering, management and marketing personnel having a fundamental engineering background. Sufficient introductory material is included so that readers need no former background in inertial navigation or complex mathematics. The emphasis in the book is on providing down-to-earth explanations of basic principles associated with strapdown systems and hardware/software components. Because many elements of strapdown inertial navigation are inherently analytical in nature, the course addresses the analytical aspects, but primarily from a functional and operational standpoint. Detailed mathematical derivations are avoided and referenced instead to the supporting book - **Strapdown Inertial Navigation Lecture Notes**.

• **Strapdown Inertial Navigation Lecture Notes** - 376 page reformatted paperback "Blue Book" containing a compilation of technical material prepared by Paul G Savage including detailed derivations of strapdown inertial navigation equations, computational algorithms, Kalman filtering techniques, and descriptions of inertial systems/sensors described in the Introductory Course.

ORGANIZATIONS THAT HOSTED THE STRAPDOWN INTRODUCTORY COURSE

- Naval Air Development Center
- McDonnell Douglas Corporation
- Naval Weapons Center
- U.S. Army Avionics R&D Activity
- Naval Avionics Center
- Texas Instruments
- Rockwell International
- Honeywell Avionics Division/Mpls.
- Sundstrand Instrument Division
- Singer Kearfott Division
- Wright Patterson AFB
- Contraves
- Eastman Whipstock
- Boeing Aerospace Company
- U.S. Army Missile Command
- Systron Donner
- Naval Surface Warfare Center
- NASA Goddard Space Flt Center
- Lockheed Martin Astronautics
- Honeywell Avionics Division/Clearwater
- Allied Bendix Guidance Systems Division
- Sandia National Laboratories
- Holloman AFB, Central Inertial Guidance Test Facility
- Lear Siegler, Instrument Division
- Naval Air Test Center
- General Dynamics Convair
- Bell Aerospace
- Brazilian Naval Commission, Rio de Janeiro
- Northrop Electronics Division
- Environmental Research Institute of Michigan (ERIM)
- Norwegian University Of Science And Technology
- C. S. Draper Laboratory
- United Space Alliance / NASA Johnson Space Center
- NASA Kennedy Space Center
- Johns Hopkins University Applied Physics Laboratory
- Lockheed Martin Missiles & Fire Control
- Minneapolis Sessions For The General Public (1982 - 2009)

Introduction to Strapdown Inertial Navigation Systems - Contents

(Continued On Next Page)

Introduction to Strapdown Inertial Navigation Systems - Contents

(Continued)

Author Biographical Sketch

Paul G. Savage is an internationally recognized expert in the design and test of strapdown inertial navigation systems, and president of Strapdown Associates, Inc., a company he founded in 1980. Strapdown Associates has provided software and engineering services to government agencies and aerospace companies for strapdown inertial system configuration definition, flight software development, system simulation, and testing. Mr. Savage has published and presented several papers on strapdown inertial navigation systems and associated computational elements. From 1974 to 2009 he served as an author/speaker on several NATO AGARD and RTO technology transfer lecture series tours. From 1981 to 2009, Mr. Savage provided his *Introduction To Strapdown Inertial Navigation Systems* course to the aerospace industry. He has written and published the textbook *Strapdown Analytics* (available from Strapdown Associates) detailing the analytical aspects of strapdown inertial navigation system design. From 1963 to 1980, Mr. Savage was employed at Honeywell Avionics Division as Senior Principal Engineering Fellow where he led engineering design teams and provided technical consultation to Honeywell engineering managers for system design, analysis, software development, simulation, and integration/test in the evolutionary development of laser gyro strapdown inertial navigation systems for military and commercial aircraft. From 1971 through 1975, he was the engineering manager and system design engineer for the Honeywell LINS-0 strapdown inertial system, the first to prove the readiness of laser gyro strapdown inertial navigation technology for aircraft applications as demonstrated during a landmark flight test series at Holloman Air Force Base in 1975. Mr. Savage is a graduate from the Massachusetts Institute of Technology where he received his MS and BS degrees in Aeronautical Engineering in 1960.

ORDERING INFORMATION

General Sales Policy: Introduction to Strapdown Inertial Navigation Systems and Strapdown Inertial Navigation Lecture Notes are sold as a set. The Price for the set is $185.00. Pricing is subject to change without notice.

Method of Payment: All orders must be prepaid by personal or company check, travelers check, international money order, or credit card (VISA, MasterCard, Diners Club or American Express). Checks must be made payable to Strapdown Associates, Inc. in U.S. dollars, drawn on a U.S. bank. Please add the appropriate shipping and handling charge for each order. We cannot accept Credit Card number/date payment information by email - Please use our toll-free telephone, Fax, or normal mail as alternates.

Sales Tax: As required by law, please add 6.875% Sales tax on all orders delivered to Minnesota. Non-U.S. residents are responsible for personal payment of any taxes required by their government.

Shipping And Handling Charges:

Region	Delivery Time	Each Order
USA	5 Business Days	$20.00
Canada	5 -10 Business Days	$36.00
All Other Regions	5 - 10 Business Days	$53.00

ORDERING FORM

SOLD TO: Please Print or Type

Name _____

Address _____

_____

☐ Home (UPS will not deliver to a P.O. Box)
☐ Business

City/State/Province _____

Country _____

Zip/Postal Code _____

Telephone (_____) _____
(During Normal Business Hours)

Email Address _____

SHIP TO: If Different Than Sold To

Name _____

Address _____

_____

☐ Home (UPS will not deliver to a P.O. Box)
☐ Business

City/State/Province _____

Country _____

Zip/Postal Code _____

Telephone (_____) _____
(During Normal Business Hours)

Email Address _____

METHOD OF PAYMENT

☐ Enclosed check

☐ Money Order Transfer - Email or telephone for instructions: pgs@strapdownassociates.com or toll free using 1-855-479-1981

☐ Credit Card - Card number and expiration date to be provided by toll-free Voice/Telephone, Fax/Telephone, or Regular Mail - Not by email.

☐ VISA ☐ MasterCard
☐ American Express ☐ Diners Club

_____
Card Number Expiration date

_____
Signature

ORDER SUMMARY

Quantity (Introduction & Lecture Notes Set) _____

Price (Quantity × $185.00) _____

Shipping & Handling (See Listed Rates) _____

Sales Tax (For MN Residents Only - 6.875%) _____

TOTAL _____

Mail, Voice Phone Or Fax Phone Your Order To:

Strapdown Associates, Inc.
4727 South Lake Sarah Drive
Maple Plain, MN 55359

Voice or Fax Phone: Toll Free 1-855-479-1981