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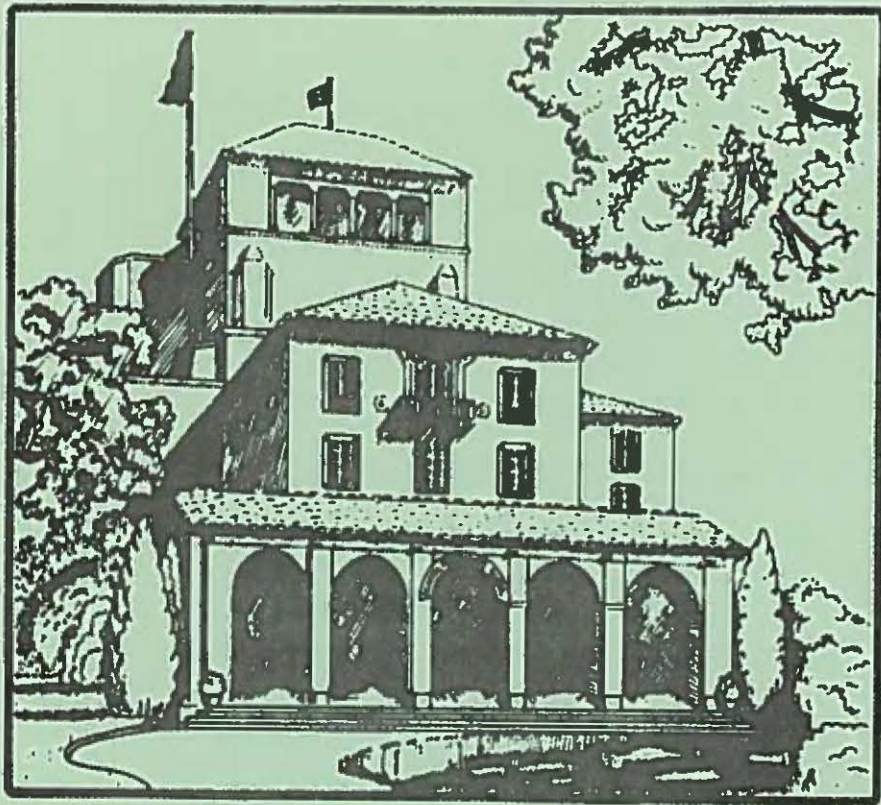
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Naval Postgraduate School

FACULTY BULLETIN

ISSUE NO. 4-75

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NEW FACULTY

Charles P. Gibfried, United States Navy, attended the University of Illinois, where he received the Bachelor of Science degree in Management in June 1958. In December, 1972, he received the Master of Science degree in Computer Systems Management with distinction from the Naval Postgraduate School.

He was employed for four and a half years with the Data Processing Division of IBM, first as a systems engineer and later as a marketing representative. During this time he worked primarily with firms in the manufacturing and distribution industries.

After commissioning, he attended the Navy Supply Corps School in Athens, Georgia. He then served as Supply Officer in USS BLAIR (DER-147), USS PARICUTIN (AE-18) and USS ORCA (AVP-47) and as Outfitting and Liaison Officer in HMS ETHIOPIA (AO-1).

While assigned to the Staff, Commander in Chief, Pacific, he performed duty both as a systems analyst and as head of an analysis and programming branch for the Command and Control Systems Group. He has been responsible for the Data Processing Facility at the Combined Intelligence Center, Tan Son Nhut, and while at the Naval Supply Center, San Diego, he served as Director of Data Processing, managing a five-computer-complex serving multiple governmental agencies in the Southwestern United States.

Prior to his assignment to the Naval Postgraduate School in February, 1975, he was assigned to USS ENTERPRISE (CVAN-65) as Assistant Supply Officer. He is teaching in the Department of Operations Research and Administrative Sciences and with the Computer Science Group.

He has been listed in Who's Who in Computers and Data Processing and wears the Navy Commendation Medal and Joint Services Commendation Medal. While assigned to Staff, Commander in Chief, Pacific, he received a Navy League Award for Special Achievement.

FACULTY PUBLICATIONS

Barr, Donald R.

Strong optimality of the shoot-adjust-shoot strategy. Operations Research, Vol. 22, No. 6, November-December 1974, pp. 1252-1257.

Abstract: This paper shows that seemingly different "adjustment" procedures are equivalent, if viewed in appropriate coordinate systems. It extends previous results concerning sequential adjustments that are constrained to be linear functions of observed impact points to the class of translation-invariant procedures. It also reviews properties of the optimal sequential adjustment procedure, including some related to stochastic approximation.

Bradley, Gordon H., Hammer, Peter L., and Wolsey, Laurence.

Coefficient reduction for inequalities in 0-1 variables, Mathematical Programming 7(1974), pp. 263-282.

Abstract: For a given inequality with 0-1 variables, there are many other "equivalent" inequalities with exactly the same 0-1 feasible solutions. The set of all equivalent inequalities is characterized, and methods to construct the equivalent inequality with smallest coefficients are described.

Buskirk, F.R., Dyer, J. N., Maruyama, X. K., and Woehler, K. E.

The Measured Energy Loss of High Energy Electrons in Various Metals. Z. Physik 271, 69 (1974).

Abstract: The energy distribution of electrons of about 53, 75 and 93 MeV has been measured before and after passing through Be, Sm, Gd, Al, Cu, and Pb absorbers of various thicknesses. The most probable energy loss and their half-widths agree with the theory of Blunck and Westphal. An improved semi-empirical formula for the most probable energy loss is presented.

Maruyama, X. K., Lindgren, R. A., Bendel, W. L., Jones, E. C. Jr., and Fagg, L. W.

Excitation of M1 and M2 states in ^{22}Ne by 180° electron scattering. Phys. Rev., C 10, 2257 (1974).

Abstract: States in ^{22}Ne have been studied by 180° electron scattering. Transition strengths and spin and parity determinations are presented.

Sarpkaya, T.

An Inviscid Model of Two-Dimensional Vortex Shedding for Transient and Asymptotically-Steady Separated Flow Over an Inclined Plate.

Journal of Fluid Mechanics, Vol. 68, March 1975, pp. 109-130.

Abstract: A potential flow model of two-dimensional vortex shedding behind an inclined plate is developed. The free shear layers which emanate from the sides of the plate are represented by discrete vortices through the use of the appropriate complex-velocity potential, the Kutta condition and the Joukowski transformation. The analysis is then applied to predict the kinematic and dynamic characteristics of the flow for various angles of attack. The results compare favorably well with the available experimental data as far as the form of the vortex shedding, the Strouhal number, and the normal-force coefficients are concerned.

Sarpkaya, T.

On the Stability of Developing Laminar Pipe Flow Subjected to Axisymmetric and Non-Axisymmetric Disturbances.

Journal of Fluid Mechanics, Vol. 68, March 1975, pp. 345-352.

Abstract: The stability of developing laminar flow to axisymmetric and non-axisymmetric disturbances is examined and it is shown that the linear instability is confined to the non-similar inlet region of the tube. The critical Reynolds number for non-axisymmetric disturbances with azimuthal wave number $n=1$ is smaller than that for axisymmetric disturbances with wave number $n=0$.

Sarpkaya, T. and Hiriart, G.

On the Analysis of Curved Target-Type Thrust Reversers. Journal of the American Institute of Aeronautics and Astronautics (AIAA), Vol. 13, February 1975, pp. 185-192.

Abstract: The reverse-thrust performance of two-dimensional and axisymmetric curved deflectors, symmetrically situated with respect to the impinging jet, is analyzed through the use of Levi-Civita's method, Belotserkovsky's integral method, and the finite element method. The predicted results are shown to be in good agreement with the available experimental data. The real-fluid effects such as Coanda effect, entrainment, and the pressure ratio are discussed in the light of the present analytical results. (Note: LT Gerardo Hiriart, Chilean Navy, received his Ph. D. from the Naval Postgraduate School in December 1974).

Sarpkaya, T.

Forces on Cylinders and Spheres in a Sinusoidally Oscillating Fluid. Journal of Applied Mechanics, Trans. ASME, Vol. 42, March 1975, pp. 1-10.

Abstract: The in-line and transverse forces acting on cylinders and the in-line force acting on spheres immersed in a harmonically oscillating fluid in a U-shaped vertical tunnel have been measured. The drag, inertia, and the transverse force (lift) coefficients have been determined through the use of the Fourier analysis and found to depend on a period parameter. The results have shown that the transverse force on cylinders is as large as the in-line force and alternates at frequencies ranging from one to four times the driving frequency of the fluid within the range of the subcritical Reynolds numbers investigated. The results are of practical significance in the design of off-shore structures.

FACULTY PROFESSIONAL ACTIVITIES

Assistant Professor Gerald G. Brown, Operations Research and Administrative Sciences Department, presented an invited paper "A Nonlinear Programming Algorithm using both First and Second-Order Representation of Highly Nonlinear Problems," at the Western Section Meeting of the Operations Research Society in Monterey, 6-7 March 1975.

Associate Professor F. R. Buskirk presented an invited paper titled "Giant Resonance in Heavy Nuclei Measured by Inelastic Electron Scattering" at the Anaheim Meeting of the American Physical Society on February 1, 1975.

Associate Professor M. F. Platzer attended the Annual Meeting of Project SQUID, held at the Southern Methodist University, Dallas, Texas, March 10-13, 1975. He chaired Session II on Airbreathing Propulsion.

RESEARCH AWARDS

Following is a listing of sponsored research funds received by the Naval Postgraduate School during the period 1 February - 28 February 1975. Projects indicated by an asterisk are continuations of existing programs.

<u>SURCE</u>	<u>AMOUNT</u>	<u>TITLE</u>	<u>PRINCIPAL INVESTIGATOR</u>
Naval Sea Systems Command Washington, D. C.	\$ 5,860	Elastic-Plastic Analysis of Obturators	D. Salinas Mechanical Eng
Naval Torpedo Station Port, Washington	13,000	A Short Course: Microcomputer Update	V. Powers Electrical Eng G. Kildall Computer Science
U.S. Arms Control and Disarmament Agency Washington, D. C.	15,000	Signal Analysis of Seismic Data	G. A. Rahe Computer Science
Naval Electronics Lab Ctr San Diego, California	2,000	TELCAM Project Managers Guide	P. DeMayo Operations Rese. & Admin Science
Naval Sea Systems Command Washington, D. C.	82,000	*Optical Wave Propagation in the Marine Boundary Layer	E. C. Crittenden Physics & Chemi K. L. Davidson Meteorology
Naval Air Systems Command Washington, D. C.	12,000	*Short Range Missile Aerodynamic	A. E. Fuhs Aeronautics
Naval Air Systems Command Washington, D. C.	41,000	*Project SPOTLIGHT	G. A. Rahe Computer Science
Naval Electronic Systems Com Washington, D. C.	5,000	*PIXIE Sea Test Data Analysis	C. E. Menneken Electrical Eng
Naval Weapons Center China Lake, California	5,000	*Hydraulic Ram Program	R. E. Ball H. Power Aeronautics
Materials Laboratory Wright-Patterson AFB, Ohio	2,000	*Symposium on Propulsion System Structural Integra- tion and Engine Integrity	A. E. Fuhs Aeronautics
TOTAL	\$182,860		
Naval Torpedo Station Port, Washington	13,000 decrease	Range Design Studies	C. E. Menneken Electrical Eng
NET GAIN	\$169,860		

TRAVEL ORDERS WRITTEN TO MARCH 18, 1975

supported by O&MN Funds:

Woods, W. M.	12-18 Apr 75	Dallas	Att. Nat'l Conv of Assoc of Educ. Comm. & Technology.
Hucker, R. D.	10-12 Apr 75	Davis	Att Exec. Com. Mtg and Spring Meeting of PSW-ASEE.
Meti, F. M.	10-19 Apr 75	Wash., DC	Participate in Program Review by curric. sponsor.
Herr, B.	30 Mar-3Apr	Wash., DC	Chair a symposium and participate in Ann Educ. Res. Assoc.
Myer, J. N.	24-29Mar75	Vallejo	Att special wpns sys. trng crs.
Barrr, D.R.	24-29Mar75	"	"
Mayachandran, T.	24-29Mar75	"	"
Novach, L. D.	24-29Mar75	"	"
Marrrick, P. M.	24-29Mar75	"	"
Monrr, J. B.	24-29Mar75	"	"
Muffin, J. H.	24-29Mar75	"	"
Hucker, R. D.	24-29Mar75	"	"
Klatzer, M. F.	24-29Mar75	"	"
van der Bijl, W.	23-28Mar75	"	"
Herr, C. B.	20-23Mar75	Las Vegas	Deliver paper at Academy of Management Mtg, West. Section.
Hell, R. W.	20-23Mar75	Los Angeles	Att. 2d Nat'l Conf on Personalized Instruction in Higher Education.
Woods, W. M.	20-23Mar75	" "	
Hell, R. W.	17-20Mar75	Moffett Fld	Confer & attend AGARD lectures.
Hjelsen, J. C.	7 Mar 75	Lemoore	Photograph evidence for ASM Crs.
Hombberger, R. B.	7 Mar 75	SFO	Observe UA approach to safety.
Hjible, L. C.	6-8 Mar 75	Alameda	NARF Alameda Field Trip.
Hquette, R. G.	5-25Mar75	Barrow	Teach Oceanography at NARL.
Horsting, J. R.	2-6 Mar75	Wash, DC	Official business for NPS.
Hucci, P. F.	1-7 Mar75	Houston	Att 20th Ann. Int'l Gas Turbine Conference. Mbr of Exec Com.
Hndrews, R. S.	1 Mar 75	SanLuisOb.	Att FarWest Sect., Nat'l Assoc of Geology Teachers.

Supported by Research Funds:

Medwin, H.	7-12Apr75	Austin	Att Acoustical Soc. of Am. Mtg
Marto, P. J.	27Mar-2Apr	Monterey	Disc. res. proj. with investi- gators & return to Annapolis.
Creighton, J. W.	26-28 Mar75	Berkeley	Confer w/res associates at Cal
Lindsey, G. H.	24-28Mar75	WashDC Philadelphia & Hampton	Report on research results.
Houlihan, T. M.	23-27 Mar75	WashDC	Discuss research programs
Nunn, R. H.	23-27Mar75	WashDC	Discuss research programs
Williams, R. T.	23-29Mar75	LosAngeles	Discuss research and present seminar.
Kildall, G. A.	23-30Mar75	Seattle	Deliver short course at Naval Torpedo Station.
Powers, V. M.	"	"	"
Fuhs, A. E.	21Mar75	Moffett	Use Computer Program.
Hartman, J. K.	20Mar75	Alameda	Consult re continuing education.
Nunn, R. H.	20 Mar75	HalfMoonBay	Represent Navy at contractor tests.
Houlihan, T. M.	"	"	"
Jolly, J. A.	20-22Mar75	LasVegas	Att. West Div, Acad of Mgmt M
Creighton, J. W.	19-21Mar75	Berkeley	Confer with res. associates.
Gaver, D. F.	19-23Mar75	Pittsburgh Cleveland	Att mtg at NSRDC and conduct research at Carnegie Mellon.
Haney, R. L.	18-20Mar75	LaJolla	Attend NORPAX Mtg.
Forrest, R. N.	18-21Mar75	WashDC	Att Workshop on Ops Res Model
Martin, F. L.	18-21Mar75	Anaheim	Att Conf of Optical Society of Ar
Raike, W. M.	17-22Mar75	WashDC	Coordinate res. at BuMed.
Eoyang, C. K.	17-22Mar75	"	Discuss research at OP96.
Whipple, D.	17-22Mar75	"	"
Boston, N. E. J.	16-23Mar75	Seattle	Discuss ONR related research.

Parry, S. H.	16-28Mar75	Moline Denver	Assist in research and discuss research topics.
Fuhs, A. E.	14 Mar75	Moffett	Use Computer Program.
Neighbours, J. R.	13-15Mar75	White Oak	Att Semiannual Navy Advisory Panel.
Menneken, C. E.	12-15Mar75	WashDC	Discuss with Non-Acoustic Tech. Advisory Group.
Adler, R. W.	11-13Mar75	WashDC	Briefings on signal station locator
Barr, D. R.	10-13Mar75	CpPendleton	Consultation w/NCTSSA.
Leipper, D. F.	9-13Mar75	Seattle	Att and participate in Exploratory
Elsberry, R. L.	9-13Mar75	Seattle	MTg between national agencies.
Fuhs, A. E.	7, 14, 21Mar75	Moffett	Use computer program
Adler, R. W.	7Mar75	Mountain V.	Briefing on DF Algorithm
Tao, T. F.	6-15Mar75	Pasadena RomeAFB WashDC	Att. DDC Imaging Conf; report on LSI Study; report on CCD study
Lewis, P. A. W.	5-8 Mar75	LosAngeles	Give talk at SHARE Mtg and visit UCLA.
Knorr, J. B.	3-5Mar75	Burbank	Briefings on TASES Res. Proj
Tolles, W. M.	2-5Mar75	China Lake	Consult with Research Sponsor.
Stolfi, R. H.	26Feb-8Mar	WashDC Picatinny Burlington Philadelphia	Discuss Armaments Develop. Programs in 4 cities.

No cost to the Government:

Waller, E. J.	24-29Mar75	Los Angeles	Att short course
Lindsay, G. F.	20 Mar 75	Alameda	Consult with personnel at NARF
Clark, J. P.	20 Mar 75	SanJose	Att. 3d Ann. Electronic Materials Symposium of No. Calif.
Comstock, C.	20-22Mar75	Sunnyvale	Att Review of Army Math. Res.
Haderlie, E. C.	19-22Mar75	USNS De- steiguer	Participate in dredging operations in Monterey Canyon.
Lockhart, B. J.	18-22Mar75	Sacramento	Serve as member of Accreditation Evaluation Committee.
Andrews, R. S.	15-22Mar75	USNS Des- teiguer	Participate in research education cruise.

Adler, R. W.	14 Mar 75	MountainView	Visit TCI to discuss Antenna Modeling.
Heinz, Otto	13 Mar 75	Moffett Field	Orientation on continuous educ.
Williams, R. T.	13-21Mar75	WashDC	Participate in mtg of Joint FGGI Review Panel at Nat'l Ac. of Sci.
Miller, J. A. <i>Acw</i>	10-12Mar75	Snowmass Colorado	Deliver invited lecture on Engr aspects of Hemodynamics at mtg of Sierra Medical Society.
Heinz, Otto	7 Mar 75	Palo Alto	Visit SRI to approve technical paper.
Parker, S. R.	6-8 Mar75	Stanford	Discuss curricula business
Perkins, A. J.	6-8Mar75	Philadelphia	Discuss shape memory alloy research at Drexel Univ.
Parker, S. R.	25-Feb-1Mar	SanFrancisco	Att. 10th IEEE Computer Society Int'l Conference.

Supported by other funds:

Hoisington, D. B.	16-22 Mar75	Pt Hueneme	Teach continuing education course.
Knorr, J. B.	16-22 Mar 75	Pt Hueneme	Teach continuing education course.

