

TRAVELS NOW AND THEN

© Christopher Earls Brennan

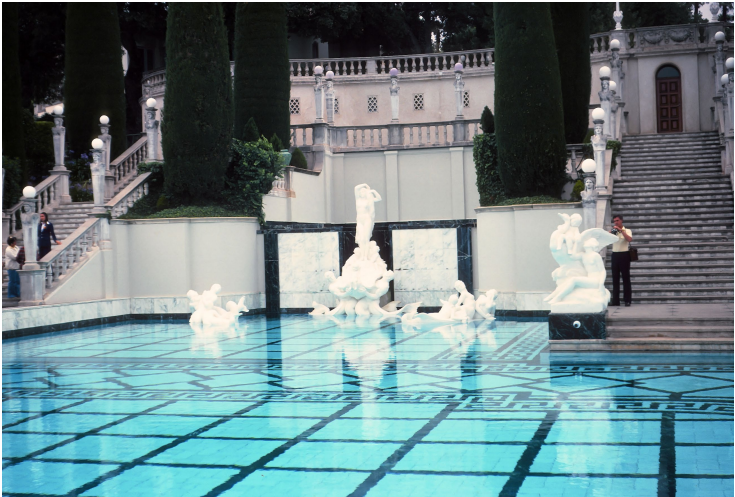
CAMPING 1976



Camping at San Simeon Beach

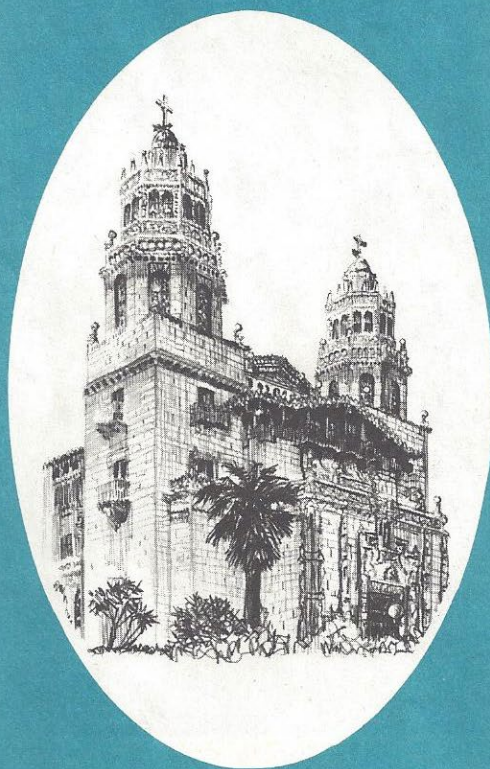


San Simeon Beach



Hearst Castle, San Simeon

HEARST
SAN SIMEON
STATE HISTORICAL
MONUMENT



A UNIT OF THE
CALIFORNIA
STATE PARK SYSTEM

Pfeiffer Big Sur



NATURE TRAIL GUIDE



past, large numbers of these trees were stripped of their bark for use in the natural tanning of leather; some bark is still used for this purpose, especially in the San Francisco Bay and Santa Cruz areas. Note the very large acorns and the shape of the leaves.

11. **BIG SUR RIVER.** The Big Sur has been flowing in this region for over a million years. Gravel deposits in terraces indicate the river at one time ran westward from the present gorge; later geologic uplifts have caused it to cut deeper into its channel and shift toward the southwest, leaving gravel terraces behind. The Big Sur River drains a relatively small region of about 46 square miles of the Santa Lucia Mountain Range. It is not uncommon for the lower reaches of the river to flood during the winter storms, and debris from past flooding can be observed along the river banks.

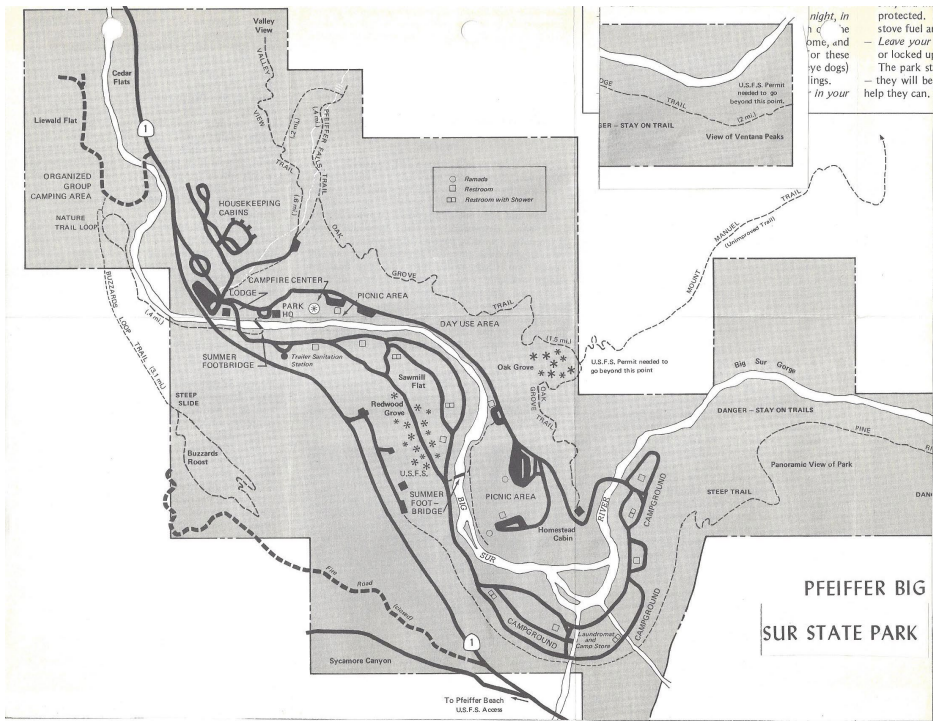
12. **YOUNG COAST REDWOOD TREE.** Young coast redwood trees do not sprout or survive well except in areas where they have fine, exposed mineral soil in which to grow, so few seedlings appear in the thick mulch of the coastal redwood forests. The coast redwood reproduces primarily from root crown shoots. These shoots that you observe above the trail can become mature redwood trees.

13. **REDWOOD STUMP.** This area was selectively logged many years ago when the redwoods were sought for their straight-grained heartwood. Now the trees are safe from such operations since they are protected within the boundaries of Pfeiffer Big Sur State Park.

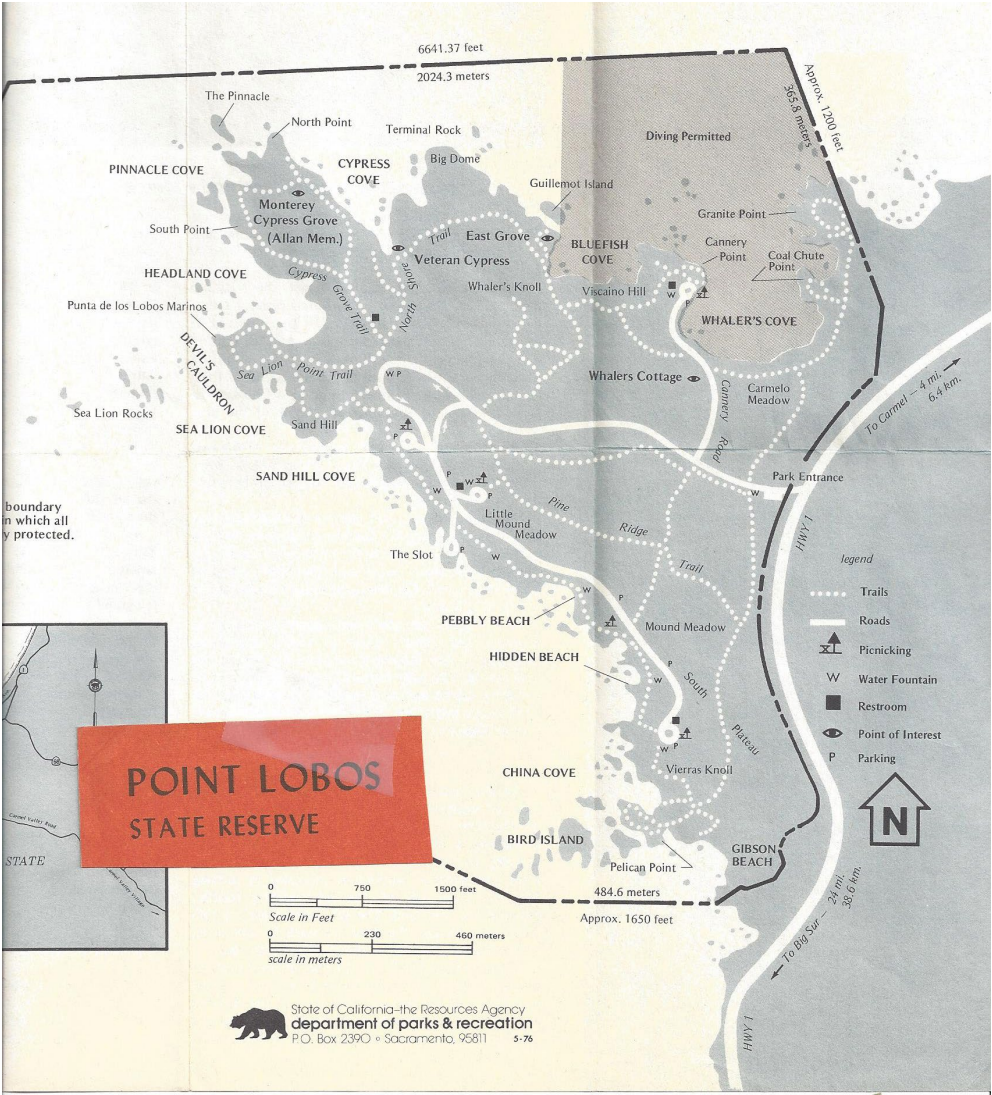
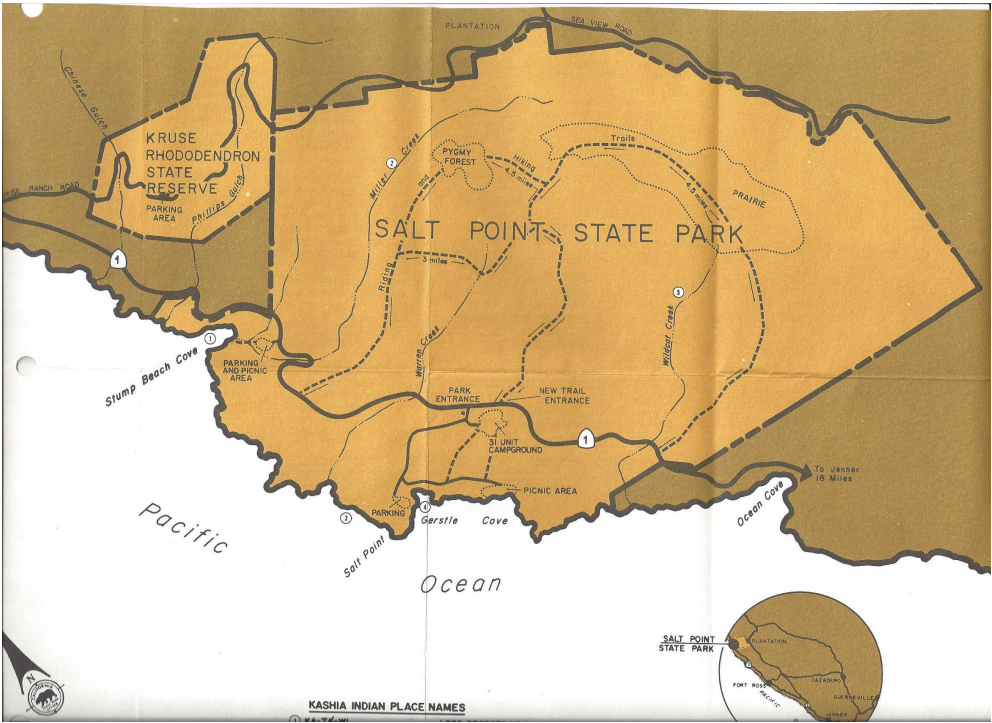
14. **WOOD FERN, *Dryopteris arguta* and REDWOOD SORREL, *Oxalis oregana*.** Redwood forests offer ideal conditions for luxuriant fern growth. The three-leaf, clover-like plant is the redwood sorrel, which provides a beautiful ground cover growth in the forest. Both of these plants thrive in the indirect light that filters through the towering redwoods.

15. **SPRINGS** are common in this area due to the large amount of yearly rainfall and the park's unusual geologic history. Here can be seen some of the plants typical of very damp locations. The chain fern, *Woodwardia fimbriata*, which may reach a height of eight feet, grows above the spring.

16. **FLATIRON GROWTH OF COAST REDWOODS.** The coast redwood leaning away from you has built — or grown — a buttress support to counteract the lean. This growth characteristic is sometimes called a









California Coast Road





Big Sur



Big Sur



Carmel

DS BRENNEN C 3840 MAYFAIR DR PASADENA CA 2133510420 INNER CIRCLE 3 223 764 111 DSMG		HOLIDEX® 	
18-0806/1624 RICHMOND, CA CONF 1R 2B 2R 1B SAT AUG 07 --GUARANTEED-- PAYMENT DUE IF NOT CANCELLED BEFORE 6 PM		HOLIDEX® 	

ROOM NO.
102

LAST NAME
BRENNEN

FIRST
C

INITIAL
C


FOLIO NUMBER
007359

DATE
2/00

STATEMENT

Holiday Inn of RICHMOND
915 West Cutting Blvd. Phone 415/237-3000
RICHMOND, CALIFORNIA 94804

DATE	REF. NO.	CODE	AMOUNT
02/07	007359	1	25.00



LAST BALANCE IS
AMOUNT DUE UNLESS
OTHERWISE INDICATED

From Folio _____ To _____

Thank You!

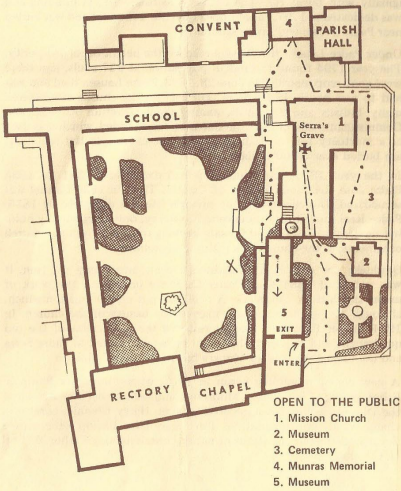
HURRY BACK

FORM 3-3
LITHO U.S.A.

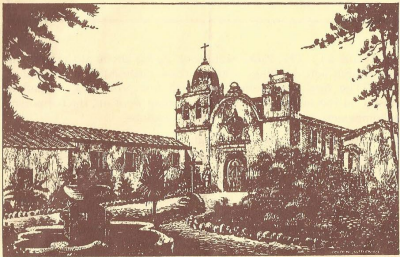
DUPLICATE

HOLIDAY PRESS BUSINESS FORMS

In 1960, His Holiness, Pope John XXIII, through the Sacred Congregation of Rites, granted Bishop Willinger's petition that Carmel Mission as a historical shrine be raised to the status of Minor Basilica. It now stands as one of only two Basilicas in the entire Western United States. As such it is a symbol of the continual prayers of many Christians that its founder, Padre Junipero Serra, who lies buried within its consecrated walls, may one day be found worthy of the title Saint.



Welcome
TO
The Basilica
OF
MISSION SAN CARLOS BORROMEO
DEL
RIO CARMELO
CARMEL-BY-THE-SEA, CALIFORNIA



FOUNDED JUNE 3, 1770

San Francisco Maritime State Historic Park
2905 Hyde Street
San Francisco, California 94109
415-441-2116

San Francisco Maritime State Historic Park
please contact the park staff:
or for reservations for school or other organized groups,
further information including a free interpretive brochure,
or toward the Golden Gate from Fisherman's Wharf. For
on the Hyde Street Pier at the foot of Hyde Street just west
San Francisco Maritime State Historic Park is located
business.
tides at low tide, the park staff stands ready to answer any
aboard these vessels. Guided tours are available by advance
reservation, and the park staff stands ready to answer any
questions you may have. A number of books and other sale
publications are available for those who would like to know
more about our unique West Coast maritime heritage.

The ships include:
1895 to carry lumber along the Pacific Coast during the
last great days of sail, and at the end of her career in
1950, the last sailing vessel in commercial service on the
Pacific Coast.

C.A. Thayer — A three-masted schooner built in
1895 to carry lumber along the Pacific Coast during the
last great days of sail, and at the end of her career in
1950, the last sailing vessel in commercial service on the
Pacific Coast.

San Francisco Maritime State Historic Park

WELCOME TO

Located here on San Francisco's colorful northern
waterfront are five historic ships and many related exhibits
that tell the story of seafaring men and ships in the
development of San Francisco and the West. It is an epic
story — one that deserves to be remembered — and the ships
are eloquent reminders. Painstakingly restored by dedicated
enthusiasts, the ships themselves are complemented and
interpreted by historical photographs, charts, and other
maritime artifacts as well as by a number of interpretive
programs and publications. By-Word headsets (included in
the modest admission fee) make it possible for you to
explore the ships on your own — to wander where your
curiosity takes you at whatever pace is comfortable — and
still have a "guided" tour. Pre-recorded messages include
the sounds of ship's bells, wind and weather, sailors at
work, crowds of people boarding the commuter ferry *Eureka*,
and true stories told by men and women who actually sailed
aboard these vessels. Guided tours are available by advance
reservation, and the park staff stands ready to answer any
questions you may have. A number of books and other sale
publications are available for those who would like to know
more about our unique West Coast maritime heritage.

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
P.O. Box 2390, Sacramento 95811 3-75

HERCULES
EUREKA
WAPAMA
C.A. THAYER
ALMA

SAN FRANCISCO MARITIME
STATE HISTORIC PARK

AQUATIC PARK

Victorian Park

Jefferson St.

Hyde St.

Polk

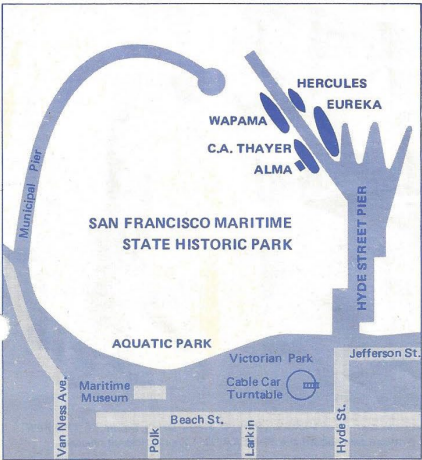
Beach St.

Larkin

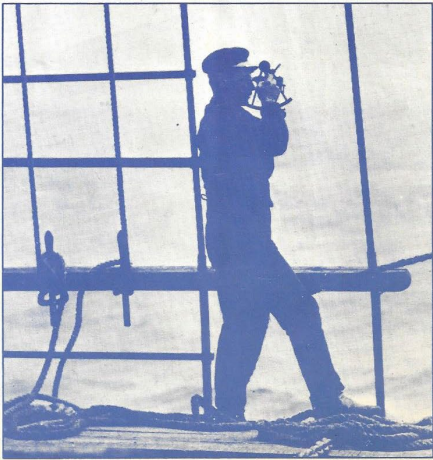
Maritime
Museum

Cable Car
Turntable

Van Ness Ave.



San Francisco Maritime
State Historic Park







San Francisco

FORT ROSS STATE HISTORIC PARK

stockade. Near the present-day parking lot a visitor center complete with historical exhibits is also planned, and some additional acreage around the Fort will be acquired in order to protect the whole historic setting.




Nicolai Petrovich Rezanov, a brilliant young nobleman and advisor to the Tsar, was the mind behind the Russian-American Company during its most successful years. In 1806, he called for southward expansion of Russian America to include outposts on the Columbia River and beyond.



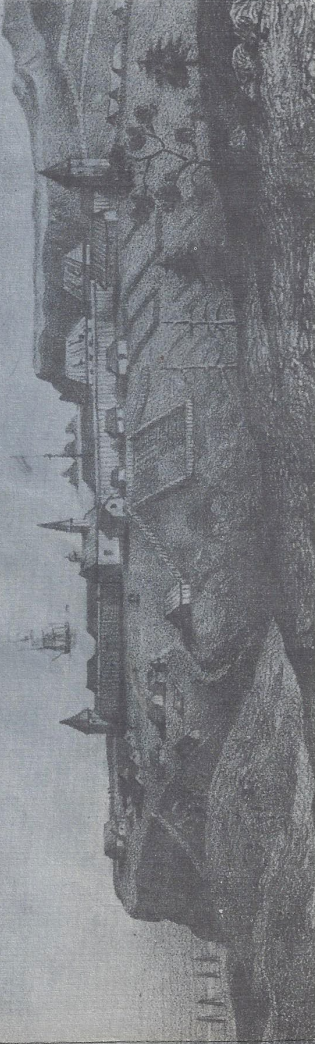
Alexander Andreevich Baranov was the short, slight, balding, but indomitable field leader or governor of Russian America. In 1812 he ordered his assistant, Ivan Kuskov, to establish a permanent outpost at Fort Ross.

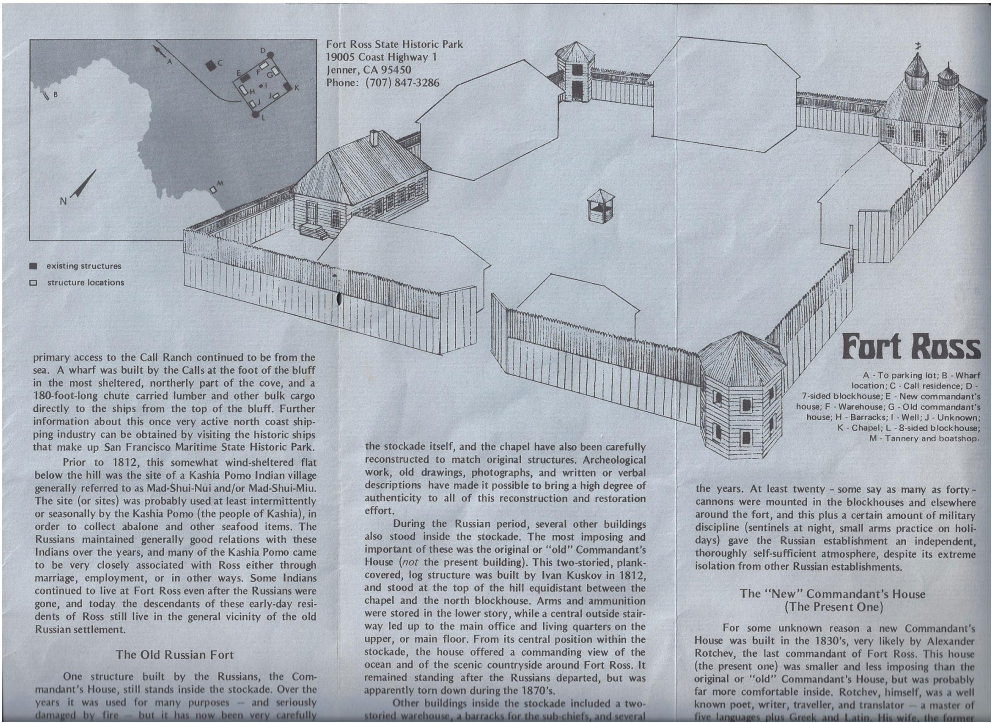
Please feel free to contact the park staff for more information about Fort Ross. A number of publications about the history and natural history of the Fort Ross area are available in the park office, and guided tours of the park are given from time to time especially on weekends and during the summer. Interpretive exhibits are on display in the Commandant's House and in the two blockhouses. Special arrangements for group tours can be made by contacting the park staff in advance of arrival at the park.



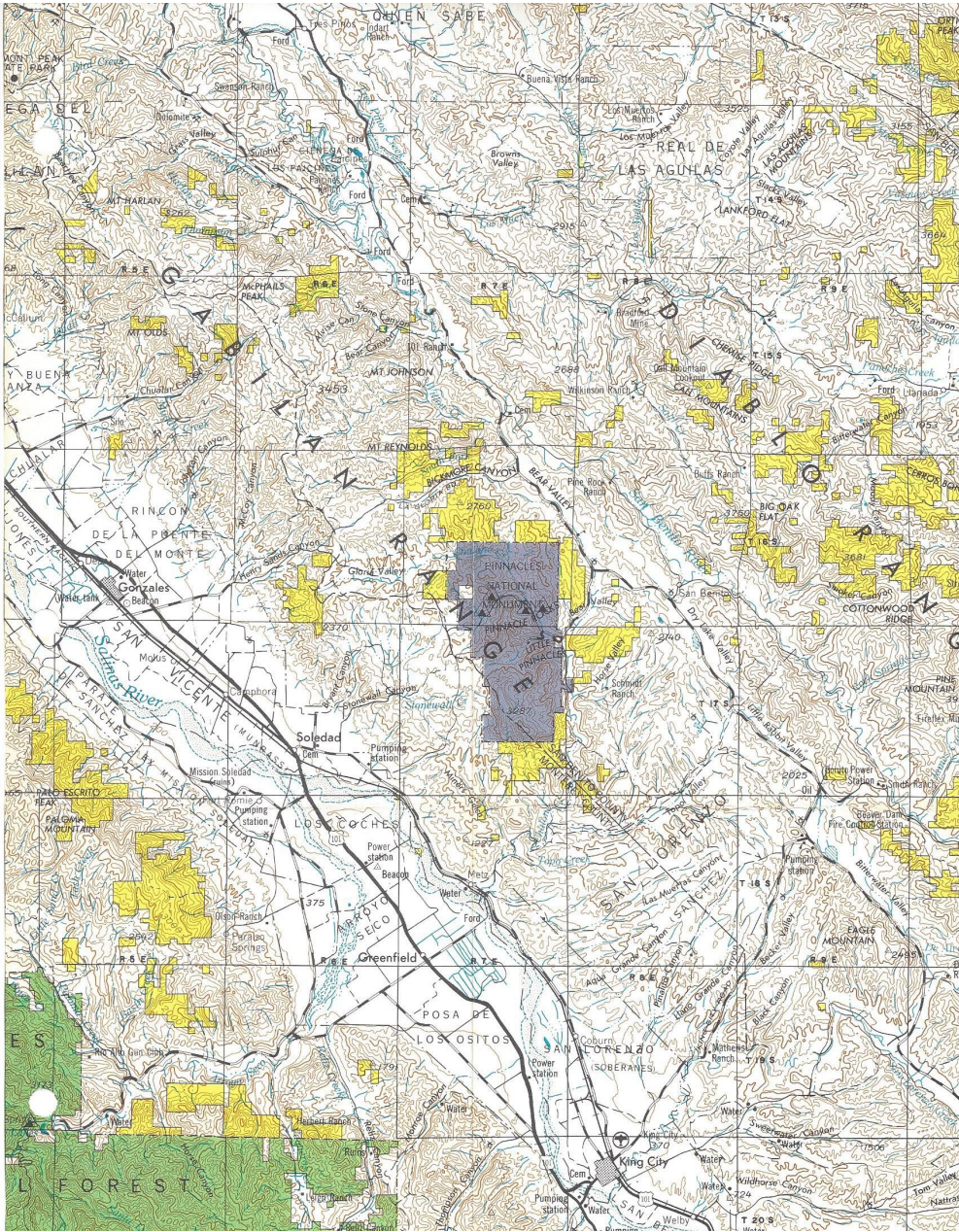
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
P.O. Box 2390, Sacramento 95811 8-75

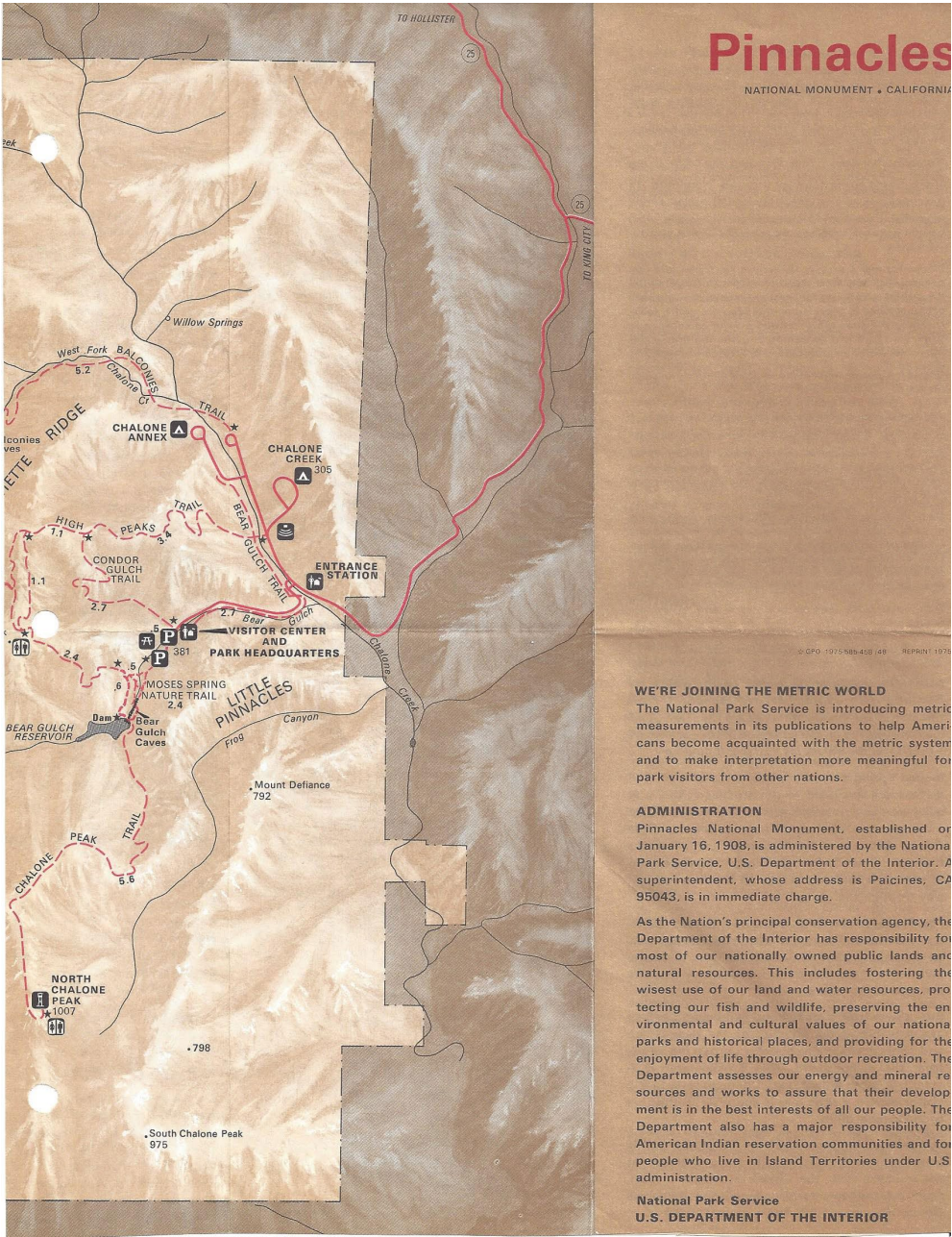
Cover: Fort Ross in 1818, from a lithograph by Bernard DuHaut Cilly.

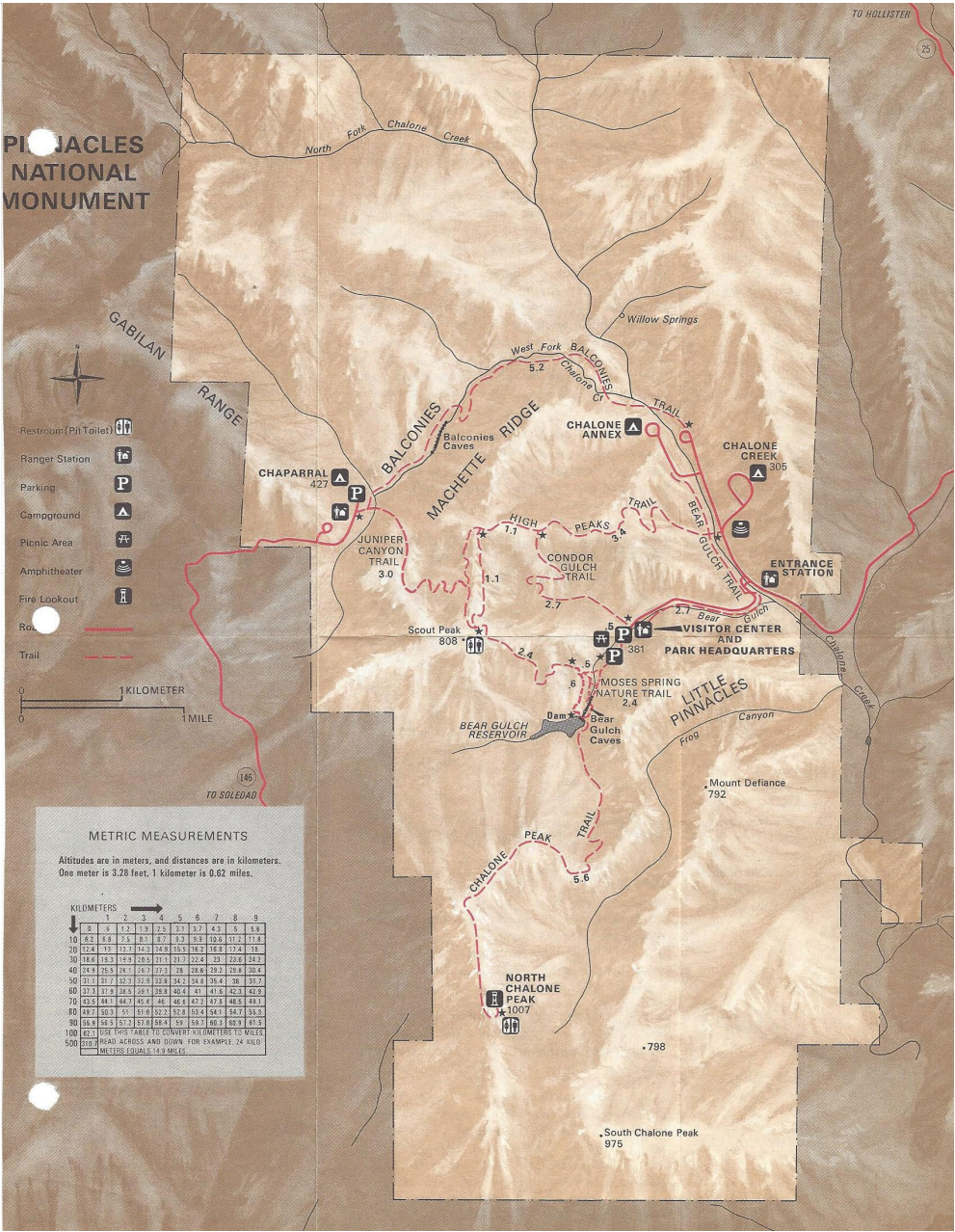




Fort Ross







[Back to table of contents](#)

Last updated 7/30/99.
Christopher E. Brennen

Already this year the first of

Naturally, if a farmer finds a

1976

HIS WORK IS UNIQUE IN MEDICAL WORLD

A FORMER Magherafelt young man has joined an international team of bionic surgeons in Australia.

Mr. Michael Brennen, son of the former chief consultant surgeon at the Mid-Ulster Hospital, Magherafelt, Mr. Wilfred Brennen, is involved with a headline-hitting group of surgeons at St. Vincent's Hospital, Melbourne, nicknamed the "Micro miracle workers" by an Australian newspaper.

The team, whose members come from Israel, Australia and the U.K., have carried out some of the most intricate operations ever performed, including the replanting of fingers, arms and legs and even the reconstruction of a damaged nose.

Their work is unique in the medical world and their reconstruction work rivals the fiction of the six-million dollar man.

Among recent cases the team has dealt with are the replacement of a thumb for a

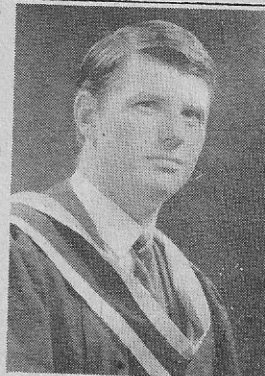
four-year-old girl with a congenital defect; the reconstruction of the lower leg of a 23-year-old man involved in a motor cycle accident and the reversal of male and female sterility operations.

On occasions the surgeons have repaired blood vessels so small that thread 19 microns in diameter is used; for comparison, human hair averages 80 microns.

MURDER BID CHARGE DROPPED

A CHARGE against a Maghera man of attempting to murder his brother, was withdrawn when the accused appeared at Magherafelt Court.

Instead, the Crown brought a lesser charge against David Paul, 42 Ballymacilcur Road, of wounding Robert James Paul.



Mr. Michael Brennen, F.R.C.S., a native of Magherafelt, who has joined a team of international surgeons working on bionics-type transplants in Melbourne, Australia. He is the son of Mr. Wilfred M. Brennen, F.R.C.S., and Mrs. Brennen, Magherafelt.

Mr. Brennen was educated at Rainey Endowed School, Magherafelt, Queen's University, Belfast, and the Royal College of Surgeons, Edinburgh.

THE CALIFORNIA INSTITUTE OF TECHNOLOGY, DIVISION OF ENGINEERING AND APPLIED SCIENCE—Applications are invited for a full time, non-tenured, faculty position, at the assistant or associate professor level, in the field of mechanical engineering with major emphasis on applied hydrodynamics and fluids engineering. Duties will include undergraduate and graduate instruction in the field. Preference will be given to candidates who have active research interest in internal flows through hydrodynamic machines, polyphase flows and applied fluid mechanics generally. Address applications to Professor T. K. Caughey, Division of Engineering and Applied Science (104-44), CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, California 91125. Applications accepted through April 2, 1976. The California Institute of Technology is an equal opportunity employer.

EXTERNAL REFEREES

Christopher Brennen

Professor L. C. Woods, Mathematical Institute, Oxford University.

Dr. G. E. Gadd, Ship Division, National Physical Laboratory, Feltham,
Middlesex, England.

Prof. B. R. Parkin, Penn. State University.

Prof. Y. C. Fung, U. C. San Diego.

Prof. P. Garabedian, Courant Institute, N. Y. U.

Dr. R. Cooper, Office of Naval Research, Arlington, Va.

Dr. G. Lea, National Science Foundation, Washington, D. C.

Prof. T. Sarpkaya, Naval Postgraduate School, Monterey, Cal.

Dr. M. Tulin, Hydronautics Inc., Laurel, Md.

Prof. N. Newman, M. I. T.

Prof. R. Street, Stanford University.

Prof. G. Parkinson, Univ. of British Columbia.

Prof. L. van Wijngaarden, Twente Institute, Enschede, Netherlands.

Prof. J. Sparenberg, Groningen, Netherlands.

Prof. S. Berger, U. C. Berkeley.

Prof. A. Acrivos, Stanford University.

H. Doiron, NASA Johnson Space Center, Houston, Texas.

Dr. S. Rubin, Aerospace Corporation, El Segundo, Cal.

Prof. E. O. Tuck, U. of Adelaide, Australia.

Dr. W. M. Morgan, Naval Ship Research and Development Center, Carderock, Md.

UNIVERSITY OF CAMBRIDGE

Department of Applied Mathematics and Theoretical Physics
Silver Street, Cambridge, England CB3 9EW

Dr. C. Brennen
Engineering Science Department
CalTech
Pasadena
California 91125
U.S.A.

14 May 1976

Dear Christopher,

This note is simply to say that I was happy to write a letter on your behalf to Professor Caughey about your application for the faculty position at CalTech. I was submerged in paper for a time after my return, and so there was a little delay before I wrote but the letter is on its way now.

I think with pleasure of those days of blissful freedom at CalTech and of my pleasant stay there. With kind regards to all friends in the Laboratory,

Yours sincerely,

George

G.K. Batchelor



Department of Industry

NATIONAL PHYSICAL LABORATORY

Ship Division

Faggs Road Feltham Middlesex TW14 0LQ

Telex 263118 Telegrams Bushylab Teddington Telex

Telephone 01-977 3222 ext 5010

Dr C Brennen
Engineering Science Department
California Institute of
Technology
Pasadena
California 91125
U S A

*Please reply to
The Superintendent
Your reference*

Our reference DB 26

Date 22 April 1976

Dear Chris

I have written a letter of recommendation to
Professor Caughey as you asked. Best of luck!

Yours sincerely

G E GADD
Ship Division

UNIVERSITY OF OXFORD

L. C. WOODS

Professor of Mathematics (Theory of Plasma)

Telephone 0865 54295

Mathematical Institute

24-29 St Giles

Oxford OX1 3LB

Dr. C. Brennan,
Engineering Science Department,
California Institute of Technology,
Pasadena,
California 91125,
U.S.A.

17th June 1976.

Dear Chris,

I have been asked by the Chairman of the Search Committee to write a supporting letter for you, which I have now done. As you probably know, you have been selected as the unanimous choice for the faculty position at Caltech. I expect the rest is just formality.

Do accept my congratulations, your performance in research has been most outstanding.

With best wishes.

Yours sincerely,



L.C. WOODS

P.S. I shall be at the Institute for Applied Mathematics and Statistics, U.B.C., Vancouver, from 16th July - 1st May 1977.

THE UNIVERSITY OF BRITISH COLUMBIA

VANCOUVER 8, CANADA

DEPARTMENT OF MECHANICAL ENGINEERING

May 10, 1976.

Dr. Christopher Brennen,
Engineering Science Department,
California Institute of Technology,
Pasadena, California,
91125 U.S.A.

Dear Dr. Brennen:

It was a pleasure to write a letter of reference for you,
as you requested. I hope the outcome is satisfactory.

With best wishes,

Yours sincerely,

A handwritten signature in cursive script, reading "Geoffrey Parkinson".

G.V. Parkinson,
Professor.

:ldb

STANFORD UNIVERSITY
STANFORD, CALIFORNIA 94305

DEPARTMENT OF CHEMICAL ENGINEERING

April 26, 1976

Dr. C. Brennen
Engineering Science Department
California Institute of Technology
Pasadena, CA 91125

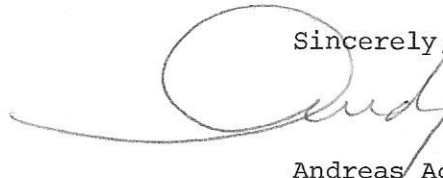
Dear Chris:

Many thanks for your letter of April 8 concerning the faculty position at Caltech.

I have already written to Professor Caughey and hope very much that things will work out to your satisfaction.

With best personal regards,

Sincerely,

A handwritten signature in dark ink, appearing to read 'Andreas', with a large, stylized loop at the beginning and a trailing flourish.

Andreas Acrivos
Professor
of Chemical Engineering

AA/hmo



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LYNDON B. JOHNSON SPACE CENTER
HOUSTON, TEXAS 77058

REPLY TO
ATTN OF: ES2

APR 19 1976

Professor T. K. Caughey
Division of Engineering and
Applied Science (104-44)
California Institute of Technology
Pasadena, CA 91125

Dear Dr. Caughey:

This letter of reference is on behalf of Dr. Christopher Brennen in connection with his application for a faculty position in your department. It has been my pleasure to have been associated with Dr. Brennen for the past two years in connection with his research and consulting activities to NASA in the area of turbopump dynamics. He has been an active and influential member of our Space Shuttle Pogo Integration Panel which is charged with the responsibility for defining and coordinating a system integration plan to avoid coupled structural-propulsion system instabilities (Pogo).

One of the more complex and little known aspects of the Pogo problem has been the influence of cavitating turbopump dynamics on stability of coupled structural-liquid propellant oscillations. The analytical and experimental research of Dr. Brennen, in association with Dr. Alan Acosta, has made a very significant contribution to our understanding of pump dynamics. As a direct result of their work, we have been able to make major improvement in our analytical models and testing techniques for the Space Shuttle Main Engine. In addition, the advice of Dr. Brennen in support of design decisions related to cavitation on obstructions in cryogenic propellant feed systems and flow field distortions at turbopump inlets has been highly valued.

During a recent visit to your campus, I had an opportunity to observe Dr. Brennen in his interpersonal relationships with several student research assistants. This experience leads me to believe that he commands as much respect from his students as he does from those of us who rely on him as a consultant in fluid dynamics problems. I highly recommend him to you and consider him uniquely qualified for a faculty position requiring student instruction and research in fluid mechanics with emphasis in the area of hydrodynamic machines.

Sincerely,

A handwritten signature in cursive script, reading "Harold H. Doiron". The signature is written in dark ink and is positioned above the typed name.

Harold H. Doiron, PhD
Chairman, Space Shuttle Pogo
Integration Panel

NAVAL POSTGRADUATE SCHOOL
MONTEREY, CALIFORNIA 93940

IN REPLY REFER TO:

DEPARTMENT OF
MECHANICAL ENGINEERING
CODE 59

15 April 1976

Professor T. Caughey
Mail Code 104-44
Division of Engineering &
Applied Science
Calif. Inst. of Technology
Pasadena, Calif. 91125

Dear Professor Caughey:

I understand that Dr. Christopher Brennen has applied for a full time faculty position at the assistant or associate professor level in the field of mechanical engineering in your division.

I have personally known Dr. Brennen for about six years, but I have been aware of his prowess in research in fluid mechanics for about ten years through his publications and presentations.

He is one of the best researchers I have known, a possessor of analytical tools as well as a clever designer of experiments. His papers are very educational because of the interesting problems and his clarity of writing, and more importantly, his understanding of the physics of the problem. Dr. Brennen made substantial contributions in the area of drag reduction, cavity flows, biological fluid mechanics, not to mention his contributions in dynamics of rotating hydraulic machines, unsteady flows with phase change, and flutter of hydrofoils. One will find his writings in all of the important journals dealing with fluid mechanics and fluids engineering.

Dr. Brennen has always impressed me as a highly competent, very bright, quick-grasping and very intelligent scientist-engineer with broad interests who, because of his inventiveness and imaginative approach, has made important contributions to analytical and experimental fluid dynamics. In his work and publications he has demonstrated time and time again his facility for clear and original thinking and his potential for continued major contributions.

To summarize then, I feel that Dr. Brennen has made significant contributions to fluid dynamics and would bring much honor to your institution. I wholeheartedly endorse his application and strongly recommend that he be appointed to the position under consideration.

Very truly yours,

T. Sarpkaya
Distinguished Professor of
Mechanical Engineering

TS:vc

*charts, my
it was my
pleasure
I hope it
works.
much
best*

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF OCEAN ENGINEERING
CAMBRIDGE, MASS. 02139
Room 5-324


April 15, 1976

Dr. C. Brennen
Engineering Science Department
California Institute of Technology
Pasadena, Calif 91125

Dear Chris,

In reply to your letter of the 8th, I will be glad to write a letter on your behalf. In fact, it is already written!

Best wishes,



J. N. Newman
Professor of Naval Architecture

JNN:jmk

16 april 1976
Groningen.

Dear Chris.

This is to inform you that I sent a letter of reference to Caltech, to support your application. Because I am fully convinced of your capacities, it was a pleasure for me to do this.

Please remember me to Doreen, hoping that you will be chosen for this vacancy,

Sincerely
Joop Sparrenberg.

HYDRONAUTICS, INCORPORATED
RESEARCH IN HYDRODYNAMICS

7210 PINDELL SCHOOL ROAD, HOWARD COUNTY, LAUREL, MARYLAND 20810—TELEPHONE 776-7454

April 29, 1976


Dr. Christopher Brennan
Engineering Science Department
California Institute of Technology
Pasadena, California 91125

Dear Chris:

Your letter of April 8 was waiting when I returned from a recent trip and I have immediately sent off a letter to Professor Caughey, which I hope is not too late. The very best of luck.

Sincerely,

HYDRONAUTICS, Incorporated



MARSHALL P. TULIN
Board Chairman

MPT:pat



Blind Copy: C. Brennen
The American Society of Mechanical Engineers

ASSOCIATE EDITORS

Bioengineering

JOHN A. BRIGHTON (1977)
The Pennsylvania State University
208 Mechanical Engineering Building
University Park, Pennsylvania 16802
814 - 865-9214

Fluid Machinery

WALTER L. SWIFT (1978)
Allis-Chalmers
Hydro-Turbine Division
Box 712
York, Pennsylvania 17405
717 - 792-9765

Fluid Measurements

ROBERT M. REIMER (1976)
General Electric Company, M/S E66
Cincinnati, Ohio 45215
513 - 243-4086

Fluid Mechanics

FRED B. GESSNER (1978)
Associate Professor
Mechanical Engineering
University of Washington
Seattle, Washington 98195
206 - 543-5090

J. PARKER LAMB (1978)

Chairman, Mechanical Engineering
University of Texas at Austin
Austin, Texas 78712
512 - 471-1131

FRANK B. PETERSON (1978)

David Taylor Naval Ship
Research & Development Center
Code 1552
Bethesda, Maryland 20084
202 - 227-1325

FRANK M. WHITE (1976)

Professor of Mechanical Engineering
and Applied Mechanics
University of Rhode Island
222 Wales Hall
Kingston, Rhode Island 02881
401 - 792-2542

Fluid Transients

C. SAMUEL MARTIN (1977)
Professor of Civil Engineering
Georgia Institute of Technology
Atlanta, Georgia 30332
404 - 894-2224

Fluidics

ROBERT L. WOODS (1978)
Mechanical Engineering Department
University of Texas at Arlington
Arlington, Texas 76019
817 - 273-2561

Polyphase Flow

CHRISTOPHER BRENNEN (1977)
Division of Engineering and
Applied Science
California Institute of Technology
Pasadena, California 91125
213 - 795-6811 Ext. 1117

Review Articles

KENNETH E. HICKMAN (1976)
York Div., Borg-Warner Corp.
P.O. Box 1592
York, Pennsylvania 17405
717 - 846-7890

Honors

GEORGE S. SPRINGER
Mechanical Engineering
University of Michigan
Ann Arbor, Michigan 48104
313 - 764-1817

Journal of Fluids Engineering
P.O. Box 69
Hanover, New Hampshire 03755

Technical Editor
Robert C. Dean, Jr. (1978)

Executive Secretary
Marguerite B. Blaney
603 - 643-3800

June 30, 1976

Professor T. K. Caughey
Chairman, Search Committee
Division of Engineering and Applied Science
California Institute of Technology
Pasadena, California 91125

Dear Professor Caughey:

SUBJECT: REFERENCE CONCERNING DR. CHRISTOPHER
BRENNEN'S PROPOSED APPOINTMENT TO ASSO-
CIATE PROFESSOR OF MECHANICAL ENGINEERING

I am very happy to write in support of Dr. Brennen's promotion. He has been an Associate Editor of this Journal for about two years now and I have worked closely with him in that function, including meeting with him several times in person. I am very impressed indeed with Dr. Brennen's intelligence, productivity, breadth of knowledge and depth of insight.

I have known your fluid mechanics (Knapp, Acosta, Sabersky, Coles, Ranney, et al) for many years. Cal Tech has a proud tradition in engineering fluid mechanics. I feel that Dr. Brennen is worthy of that tradition and has made, and will continue to make, major contributions to the science and practice of fluids engineering. I urge your Committee to enable his promotion.

Sincerely yours,

Robert C. Dean, Jr.
Robert C. Dean, Jr.
Technical Editor
(and Professor of Engineering,
Adjunct, Thayer School of
Engineering, Dartmouth College,
and Chairman of the Board of
Create Innovations, Hanover,
New Hampshire)

RCD/mb

CALIFORNIA INSTITUTE OF TECHNOLOGY

TO Chris Brennen DATE 9/8/76

FROM R. H. Cannon, Jr.

SUBJECT Basis for Expected Offer of Appointment as Associate Professor

This memo is to confirm points made in our discussion of August 17 on the above subject. Your potential appointment has been approved by the IAC, and I anticipate that it will be approved by the President and the Trustees on September 13th.

The appointment is to be without tenure, and you and I agreed that a tenure decision would be addressed at the end of three years and made effective (if the outcome is positive) at the end of four years, which would probably be the most advantageous schedule for you. I relayed the concerns of the faculty that it might be unfair to you to make this appointment, since you might interpret it as having a stronger implication of tenure than it does. The faculty's concern was whether this was fair for you. I made it clear (as I had speculatively a year earlier) that the appointment we are now contemplating would carry no particular guarantee of tenure, indeed that the odds of your achieving tenure are difficult to assess. You responded that you understand this very well, that you appreciate the faculty's concern, but that for you this was clearly a much more favorable outcome than would have been your not receiving this offer or, indeed, would have been your going to another position a year ago.

I relayed to you the comments of several faculty members expressing the fact that they felt it had been hard to see the degree of initiative and creativity you may have contributed to date because of your role with respect to the professorial faculty members with whom you work, this concern being accompanied by the hope that you will move strongly to establish an independent direction of research where your own initiative and judgment as to what research is important will be clearly evident.

Finally, I expressed the hope that I and a number of others have that you would find it worthwhile to make use of (and perhaps move forward) Caltech's special capabilities and facilities in water mechanics, particularly the water tunnel facilities. While it is quite inappropriate for any of us to nominate the direction your research may go, I would want to express my own personal hope that Caltech could use its special capabilities to make contributions in the areas of ocean engineering that are likely to be of great importance to the nation and to mankind in future decades.

RHC:pms

R.H. Cannon/s

CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA, CALIFORNIA 91125

OFFICE OF THE PRESIDENT

September 20, 1976

Dr. Christopher Brennen
3840 Mayfair Drive
Pasadena, California 91107

Dear Dr. Brennen:

I take pleasure in notifying you officially that the Board of Trustees, at its meeting on September 13, 1976, appointed you Associate Professor of Mechanical Engineering for three years, effective September 1, 1976, with an increase in salary to \$26,500 per annum. This action was taken upon the recommendation of the Division of Engineering and Applied Science and with the approval of the Provost and the President.

While this appointment is without tenure, in no event will your probationary period for tenure exceed four years from September 1, 1976.

For our records, will you kindly indicate your acceptance of this appointment on the enclosed copy of this letter and return it to the Faculty Office.

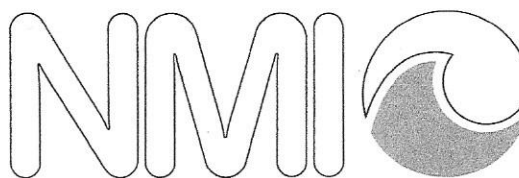
Very truly yours,



Harold Brown
President

cc: Provost
R. H. Cannon

National Maritime Institute
Faggs Road Feltham
Middlesex TW14 0LQ
Telephone 01-977 3222
Telex 263118



Dr C Brennen
Engineering Science Department
California Institute of Technology
Pasadena
California 91125
USA

Your reference

Our reference DB/26

Date 9 September 1976

Dear Chris

I was delighted to hear that you have finally got the post you wanted and deserved. It must be a great relief to you to have it all settled at last.

With best wishes.

Yours sincerely

A handwritten signature in cursive script that reads 'George'.

G E GADD
National Maritime Institute

UNIVERSITY OF CALIFORNIA, SAN DIEGO

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SANTA BARBARA • SANTA CRUZ

DEPARTMENT OF THE AEROSPACE AND
MECHANICAL ENGINEERING SCIENCES

POST OFFICE BOX 109
LA JOLLA, CALIFORNIA 92037

Sept 9, 1976

Dear Chris:

Congratulations for the appointment that is long
overdue! I am glad of Caltech's action.

I just came back from IUTAM Congress
in Delft. Our friend Wijnjaarten asked me
to convey his regards to you.

With best wishes for you and yours,

Sincerely,

Bert Frey

UNIVERSITY OF CALIFORNIA, BERKELEY

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SANTA BARBARA • SANTA CRUZ

COLLEGE OF ENGINEERING
MECHANICAL ENGINEERING

BERKELEY, CALIFORNIA 94720

November 2, 1976

Dear Chris,

Congratulations on your appointment — very well deserved.

Do you have galley proofs yet for your "Microorganism Propulsion" article to appear in Annual Review of Fluid Mechanics? Or if not, do you have a manuscript that you would be willing to send a copy of to me. In other words, I would very much appreciate having a copy of the article in any shape or form if such is available and you would be willing to part with a copy thereof.

Best wishes and again, congratulations.

Sincerely,
Stanley Berges

STANFORD UNIVERSITY
STANFORD, CALIFORNIA 94305

DEPARTMENT OF CHEMICAL ENGINEERING

September 22, 1976

Dr. Christopher Brennen
Engineering Science Department
California Institute of Technology
Pasadena, CA 91125

Dear Chris:

Thank you very much for your note of September 10.

I had recently heard that your application for appointment to a faculty position at CalTech had been successful and, of course, I am delighted.

It was a pleasure supporting a just cause!

With best regards,



Andreas Acrivos,
Professor

AA:ph

UNIVERSITY OF CAMBRIDGE

Department of Applied Mathematics and Theoretical Physics
Silver Street, Cambridge, England CB3 9EW

Dr Christopher Brennen
Engineering Science Department
California Institute of Technology
Pasadena
California 91125
U.S.A.

14 September 1976

Dear Chris,

I was delighted to learn from the letter of 10th September that your application for the position at CalTech has been successful. If my humble contribution played any part in the decision I am glad, although I think that all I did was to provide the modest amount of information that I had available. I am glad also for CalTech that they have got you. As the recipient of so much kind hospitality from CalTech, I now have a vested interest the welfare of the Institution!

Yours sincerely,

George

G.K. Batchelor

CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA, CALIFORNIA 91125

OFFICE OF THE PRESIDENT

February 25, 1976

Dr. Christopher Brennen
3840 Mayfair Drive
Pasadena, California 91107

Dear Dr. Brennen:

I am happy to inform you officially that the Executive Committee of the Board of Trustees, at its meeting on February 18, 1976, granted you an increase in salary to \$21,000 per annum, effective March 1, 1976.

This action was taken upon the recommendation of the Division of Engineering and Applied Science and with the approval of the Provost and the President.

Very truly yours,

Harold Brown

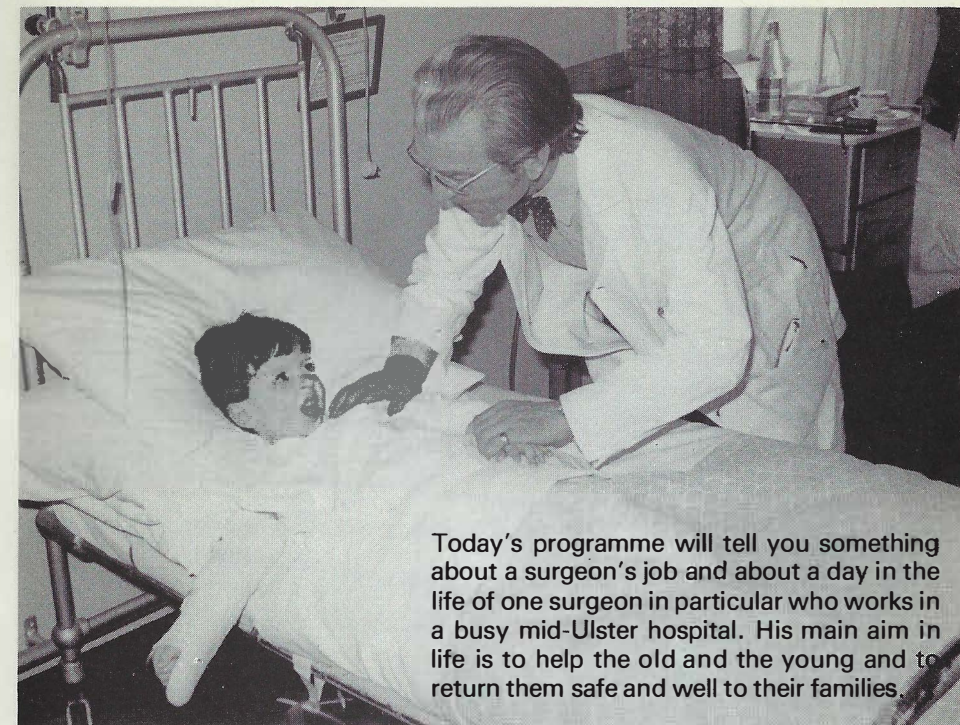
Harold Brown
President

cc: Provost
R. H. Cannon

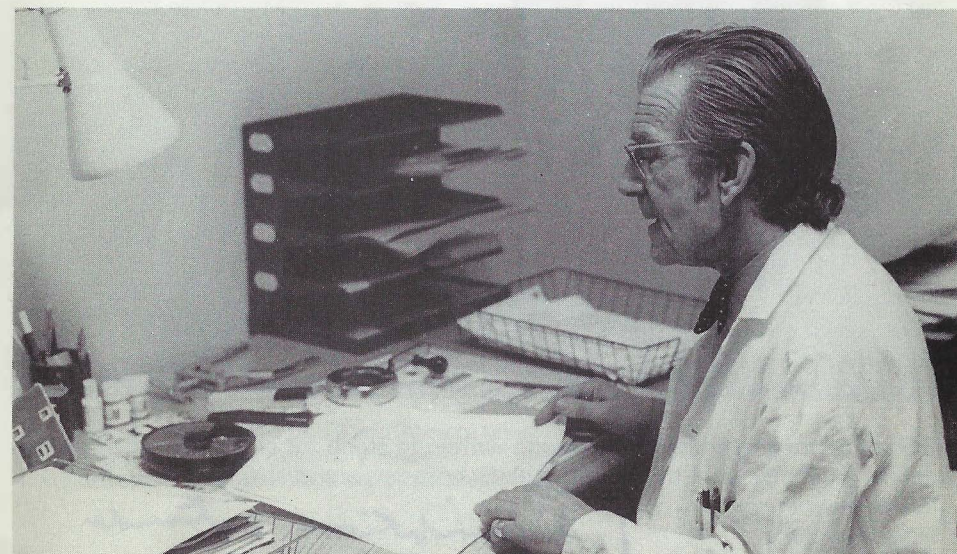


James Michael Lowther, John Patrick Maguire, Kenneth McCartney and Mark MacGougan with the Chief Scout's awards, which were presented to them by the Chief Commissioner, Mr W M Brennen (centre) at the Northern Ireland Scout Council's presentation of awards which was held in Belfast Royal Academy.

SURGEON



Today's programme will tell you something about a surgeon's job and about a day in the life of one surgeon in particular who works in a busy mid-Ulster hospital. His main aim in life is to help the old and the young and to return them safe and well to their families.



Our surgeon is a very busy man. He has operations to perform, patients to visit, paper work to deal with, lectures to write, and doctors to consult with. His work never ends for there are always people who need his help.

St. Swithin's Girls' Brigade, Magherafelt, look back on best ever year

THE annual inspection and display of St. Swithin's Church Girls' Brigade took place on Friday night in the Parish Hall, Magherafelt, when a record crowd packed the hall.

Canon T. M'Gonigle, chairman, welcomed the guests of honour, Mr. Wilfred M. Brennen, F.R.C.S., and Mrs. Brennen; representatives from other youth organisations and the visitors.

Following the company fall-in, the opening prayers were conducted by Canon M'Gonigle. The company inspection was carried out by Mr. Brennen, accompanied by the captain, Miss Betsy Bell, and Lieutenant M. Bloomer.

A most enjoyable and varied programme followed, with sketches, singing and seniors had won awards in verse-speaking and singing.

There had also been an increase in membership during the year in both the cadet and senior sections, and a spirit of real comradeship had existed in every activity.

APPRECIATION

The girls had worked very faithfully throughout the year, and in this regard she expressed special appreciation of the loyalty and support given by the parents. Good discipline had been displayed, and this was a tremendous encouragement to the officers.

The awards were presented by Mrs. Brennen. In his address the inspecting officer spoke in glowing terms of the smart appearance of the company and paid tribute to the officers for their music and movement. The cadets, in a most relaxed mood, gave a most colourful display in a special item from nursery land, while the seniors gave of their best in their own expression of old-time and modern shows.

Parents' and girls' games

were most entertaining, with the parents gaining the applause.

The captain gave a brief report of the year's activities, which had proved to be the most successful since the company was formed in 1970. She said that in the Battalion competitions in March the cadets and involvement in the work for youth of the district.

A vote of thanks to Mr. and Mrs. Brennen was proposed by the captain, who also thanked Canon and Mrs. M'Gonigle, the churchwardens and members of Select Vestry for assisting in the seating arrangements, the chief fire officer and his team for their valuable help in fire service and badge work during the year; the other officers and the girls and all who had helped to make the evening such a success.

She referred to the fact that a new officer, Mrs. Irene Wallace, had joined the company during the year, and she paid tribute to the excellent work Mrs. Wallace had done for the cadets.

Tributes were also paid to Mrs. L. Brown for outstanding service to the company, and a presentation was made to her by Michele Finlay. A token of appreciation was also handed over to Miss Lynn Brown, the pianist, by Joan Wallace.

Sergeant O. Hogg also made a presentation to Lieutenant Audrey Kane to

mark her forthcoming marriage, and good wishes to her for the future were also expressed by the captain.

Closing prayers were said by Canon M'Gonigle, and the singing of the National Anthem brought the evening to a close.

Results: Gold swimming badge, Ann Stewart. Gold first aid badge, Angela Artt, Lorna Keightley, Caroline

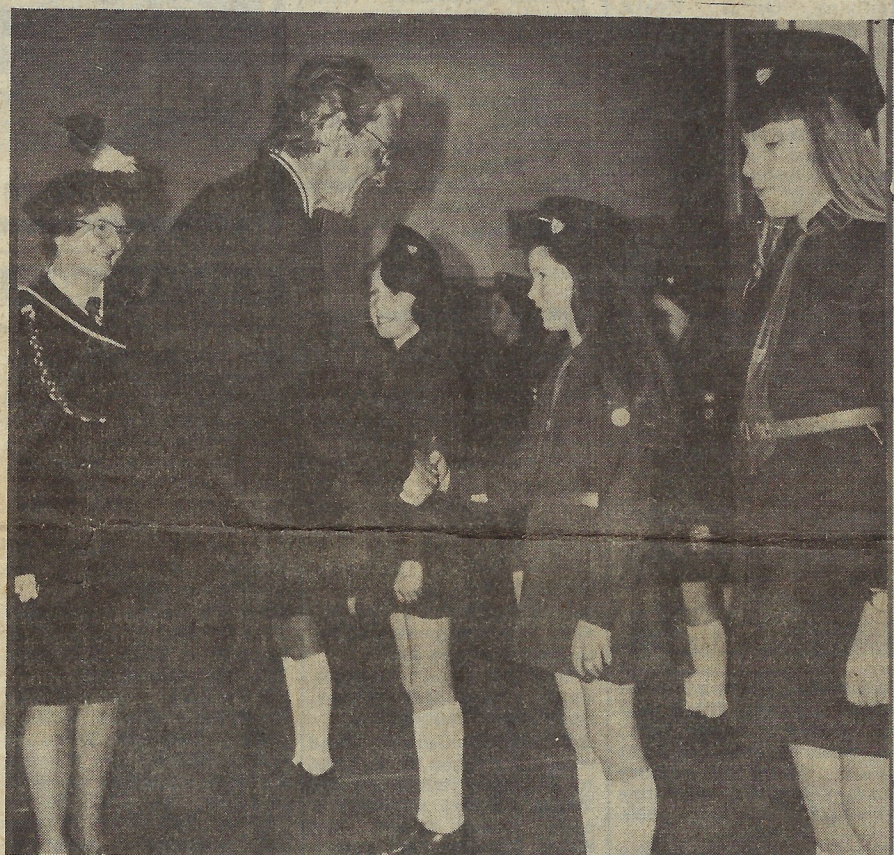
Grey. Gold athletics badge, Ann Stewart.

Gold fire fighter's badge, Barbara Church, Janet Gilmore, Gwyneth Lennox, Sandra Artt, Margo Artt, Barbara Cowden, Claire Pickering, Arlene M'Cullagh, Gillian Finlay, Jane Evans, Claire Evans, Caroline Grey, Irene Wallace.

Silver fire fighter's badge,

Fiona Wright. Silver service star, Ann Stewart, Lorna Keightley, Caroline Grey, Wendy Anderson, Claire Church, Angela Artt, Jean Stewart.

Good conduct stripes, Barbara Church, Claire Pickering, Caroline Grey, Lorna Keightley, Margo Artt, Irene Wallace, Ann Stewart, Jean Stewart.



The inspecting officer, Mr. Wilfred M. Brennen, F.R.C.S., having a chat with one of the younger members of the St. Swithin's Church Girls' Brigade, Magherafelt, at the annual inspection.

1976 A healer of the sick for 41 years

SEEING gunshot wound victims on the operating table when the troubles started was nothing new to top surgeon Wilfred Brennen.

For during his early days as a medical student in the Thirties he watched doctors at work in the theatre of the Royal Victoria Hospital and then during the IRA campaign of the Fifties he worked as senior surgeon in the Mid Ulster Hospital at Magherafelt.

"Surgeons have certainly had more than their fair share of work over the

past few years," he said. "Some of the injuries have been terrible."

Mr. Brennen retired today on his 65th birthday after 41 years as a doctor, 37 of them as a surgeon.

Mr. Brennen, who is from Glenbrook Avenue, went to Royal Belfast Academical Institution and then to Queen's University. He qualified as a doctor in 1935 and became a Fellow of the Royal College of Surgeons in 1939.

He was the first tutor in surgery at Queen's and took up his post in the

Mid Ulster Hospital after the war.

He is looking forward to his retirement from active medicine but intends carrying on his work as president of the local Spina Bifida Association and with the NSPCC, and St. John Ambulance.

Mr. Brennen is also giving up his position as Chief Commissioner for Scouts in Northern Ireland.

He lives at Cranagh Dhu, Magherafelt, with his wife Muriel (63). They have three sons, two of them engineers, and the third a surgeon.

Last night he received a presentation from the hospital staff



Mr. Wilfred Brennen, F.R.C.S., and Mrs. Brennen, with the cup winners at St. Swithin's Church Girls' Brigade annual display