

SEVEN DAYS OF HURRICANE AGNES

Wednes. June 21 / Tues. June 27, 1972

River Stages Pg 32 Pg 32



PENNSYLVANIA ASSOCIATION OF COLLEGES AND UNIVERSITIES
800 North Third Street • Suite 401 • Harrisburg, PA 17102 • (717) 232-8639 • FAX (717) 231-2795

wednesday June 21, 1972
10 p.m. 4.30

Thursday June 22
7 a.m. 8.30
4:30 p.m. 17.16
10 p.m. 24.8

Friday June 23
1 a.m. 28.90
4 a.m. 32.30
7 a.m. 35.38
9 a.m. 36.70
10 a.m. 37.20
1 p.m. 38.50
6 p.m. 37.50
10 p.m. 38.50

Courtesy of David A. Smith Printing, Inc. • 717-561-3719

WILKES COLLEGE

JUNE 1972

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
MAY 1 2 3 4 5 6 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	JULY 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31			1	2	3
4	5	6	7	8	9	10
			11	12	13	14
				15	16	17

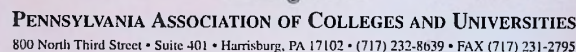
Baccalaureate-11 a.m.
Graduation-5 p.m.

PENNSYLVANIA ASSOCIATION OF COLLEGES AND UNIVERSITIES
800 North Third Street • Suite 401 • Harrisburg, PA 17102 • (717) 232-8639 • FAX (717) 231-2795

Thursday June 22

7 a.m.	8.30
4:30 p.m.	17.16
10 p.m.	24.8

Courtesy of David A. Smith Printing, Inc. • 717-564-3719



9:30 a.m.	40.00
1:30 p.m.	40.35
2:00 p.m.	40.60
10:00 p.m.	40.50

Monday June 26

7:00 a.m.	24.22
5:00 p.m.	19.82

Courtesy of David A. Smith Printing, Inc. • 711-564-3319

Graduation—5 p.m.

STAPLES®

JUNE 1972

WILKES COLLEGE

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
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4	5	6	7	8	9	10
Baccalaureate—11 a.m. Graduation—5 p.m.						
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Report on
Incomplete Grades

HURRICANE AGNES

River
Pg 32

PENNSYLVANIA ASSOCIATION
800 North Third Street • Suite 401 • Harrisburg, PA 17102

wednesday
10 p.m.

Thursday June
7 a.m.
4:30 p.m.
10 p.m.

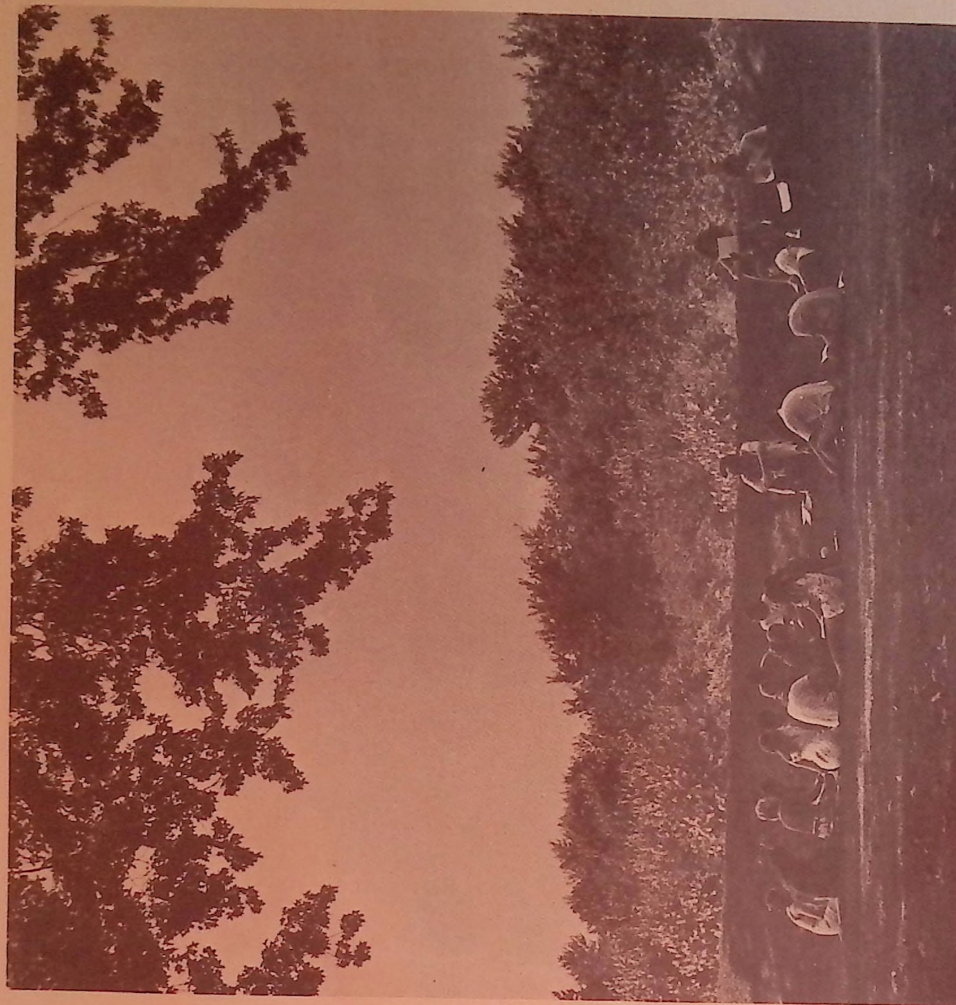
Friday June
1 a.m.
4 a.m.

Academic Freedom

Academic institutions must be free — free from outside interference and free from internal intimidation. Far too many people who should know better — both within university communities and outside them — have forgotten this first principle of academic freedom. The pursuit of knowledge cannot continue without the free exchange of ideas.

Obviously, all members of the academic community, as individuals, should be free to participate actively in whatever campaigns of causes they choose. But universities as institutions must remain politically neutral except in those rare cases in which their own integrity, educational purpose, or preservation is at stake.

Former Governor William W. Scranton
Chairman of President's Commission
on Campus Unrest
Inaugural Address—1970



INTRODUCTION TO F
HURRICANE AGNES
MONDAY JUNE 26th, 1970

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entering Pennsylvania
Pennsylvania a leader i
research initiatives in o
of faculty and administr
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Penn State, Lehigh, U. o
whose names must be
Fox from CMU was the fi

I had spent a year
Foundation in Washing
Pennsylvania Associatio
and I believe my links to
to GSAC.

Coincidentally Dr
Engineering Department,
committee of a Nation
Harrisburg June 22 and
meeting to overlap with th
had similar interests. Ji
planning to return to can
we were together on Wed

INTRODUCTION TO PERSONAL EXPERIENCES RELATIVE TO THE
HURRICANE AGNES FLOODING FROM WEDNESDAY JUNE 21 TO
MONDAY JUNE 26th, 1972 Dr. Francis J. Micheline, President

Shortly after assuming the presidency of Wilkes in 1970 I had been appointed by Governor Milton Shapp to a newly formed "Governor's Science Advisory Committee (GSAC)". As a business man Governor Shapp had been one of the early entrepreneurs in the rapidly expanding electronics field and was very conscious of the dramatic changes in business and industry that would result. In entering Pennsylvania politics one of his goals was to make Pennsylvania a leader in this transition. He was already aware of the research initiatives in our major universities and enlisted the support of faculty and administrators familiar with those activities to serve as advisors to his office. There were appointees from Carnegie Mellon, Penn State, Lehigh, U. of Pennsylvania, U. of Pittsburgh plus others whose names must be in a file somewhere. I do remember Dr. Tom Fox from CMU was the first Chair of GSAC.

I had spent a year on leave from Wilkes at the National Science Foundation in Washington and was serving on the Board of the Pennsylvania Association of Colleges and Universities at the time and I believe my links to those organizations led to my appointment to GSAC.

Coincidentally Dr. James Toole, Chair of the Wilkes Engineering Department, had been actively involved on the planning committee of a National Conference scheduled to be held in Harrisburg June 22 and 23rd. The GSAC members scheduled their meeting to overlap with the national organization since many of them had similar interests. Jim and I took separate cars since I was planning to return to campus as soon as my meeting was over but we were together on Wednesday, June 21st in Harrisburg.

The "Levee" (not a dike)
was "topped" (not broken)
at 11 a.m. Friday →

Interestingly Harrisburg radio was reporting flood alerts and before going to bed I called Anne Marie at home in Wilkes-Barre to ask how the river upstream was faring. She assured me that everything was fine and looked out the window at the river from the upstairs bedroom and said "the river looks pretty low".

The following table of data regarding river levels is instructive, and I might say, absolutely mind boggling.

Date	Day	Time	River Stages (in feet)
June 21, 1972	Wednesday	10 p.m.	4.30
June 22	Thursday	7:00 a.m.	8.30
		4:30	17.16
		10:00 p.m.	24.80
June 23	Friday	1 a.m.	28.90
		4 a.m.	32.30
		7 a.m.	35.38
		9 a.m.	36.70
		10 a.m.	37.20
		1 p.m.	38.50
		6 p.m.	37.50
		10 p.m.	38.50
June 24	Saturday	9:30 a.m.	40.00
		1:30 p.m.	40.35
		"Crest" 7 p.m.	40.60
		10 p.m.	40.50
June 25	Sunday	7 a.m.	39.00
		1 p.m.	36.00
		8 p.m.	32.30
June 26	Monday	7 a.m.	24.22
		5 p.m.	19.82



Nº 003913

OFFICIAL

Bearer *Franklin*

is on official business

BY ORDER

John



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me in Wilkes-Barre to
he assured me that
v at the river from the
ty low".
r levels is instructive,

iver Stages (in feet)

4.30

8.30

17.16

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32.30

24.22

19.82



Nº 003913

OFFICIAL PASS

Bearer *Francis J. Michelini*...
NAME

is on official business to enter the disaster area.

BY ORDER OF

JOHN RUDDICK

Police Chief, Wilkes-Barre City



These two photos were taken June 26th 1972 immediately after the flood waters had receded and before official access to the city was permitted. FJM 1/17/2018

NO DEBRIS OR CARS HAD YET BEEN TOUCHED AND THERE WAS NO RE-ENTRY PERMITTED FOR SOME TIME. AN OFFICIAL PASS WAS REQUIRED FROM CIVIL DEFENSE FOR ENTRY.

The first photo shows the Jeep and boat trailer had been left to block the street after the boat had been launched. As the floodwaters were rising cars and floating debris, like the front porch steps caught in the tree, demonstrate the power of the flood waters before receding! Water had reached the second floor of all these homes. I believe this was an area in the south end but I am not sure of the identity of the street. The location of the railroad trestle could provide identification.

The second photo is not of one of the college boats but is an "identical tri-hull with 50 hp engine" like both the college environmental science boat which had a green hull. A 1971 photo of my personal boat, a yellow hull, is shown on a later page. Both of "our college boats were deployed as a team during the flood under fire department supervision.

I stayed with my boat throughout the flood with fire department crews controlling deployment. I will add later pages with a more detailed description of our varied assignments.

After the flood the firemen superimposed my head on one of their pictures and gave it to me as a reminder of our time together. I really love this photo. It is a real life connection to an unbelievable event that certainly affected my entire subsequent life and career.

Francis J. Michelini January 17, 2018



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official access
18

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STAPLES®



These photos were taken about June 25th 1972 after the flood waters had receded. The Jeep and boat trailer had been used to block the street from traffic as the floodwaters were rising. Note the height of the front porch steps caught in the tree as the flood waters began receding! Water had reached the second floor of all these homes. Not sure of identity of the street but location of railroad trestle could proved identity.

This is not one of the college boats but is an "identical tri-hull and engine" of both the college environmental science boat which had a green hull and my personal boat, a yellow hull, both of which were operated during the flood under fire department supervision.

I piloted my boat throughout the flood with fire department crews. After the flood the guys superimposed my head on one of their pictures and gave it to me as a reminder of our time together.

I had retrieved my boat after the water receded and parked on its trailer on the grass beside the Dart Center to get to 30 W. River Street home and change into clean clothes for a TV appearance at the headquarters up at the airport. By the time I returned from the interview the boat and trailer were gone. It was immediately reported to the state police but was never located.

I really love this photo. It was a "real life" reminder of an unbelievable event that certainly affected my life.

STAPLES

STAPLES

1 of 1



unbelievable event that certainly affected my life.

1 of

STAPLES



Pre Flood Summer of 1971 Ocean City, NJ Vacation
1968 Chevrolet and new Glassmaster boat
Ellen Mayer on dock; Mike Michelini at the winch



Damaged Photos of Glassmaster boat on trailer with
Lucia, Mike, Michelle, and the Mayer girls ready to water ski



This Glassmaster bo
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of June 1972. This b
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the major fire of com
and Pennsylvania Av
book. The Wilkes Co
of use in water collec
program.

Glassmaster boat wa
Oldsmobile Vista Cru
Mike with Larry Weat



NJ Vacation
boat
the winch



ailer with
ady to water ski



STAPLES

1 of



This Glassmaster boat (and its college owned twin which was purchased for the environmental science program) were both used during Hurricane Agnes Flood of June 1972. This boat was stolen after flood waters receded after flood rescue use over five days of high water and was involved in the major fire of commercial building at corner of Northampton Street and Pennsylvania Avenue. Photos of that fire fighting in Flood Report book. The Wilkes College boat is still preserved by the College after many years of use in water collection and chemical analysis by students and faculty in that program.

Glassmaster boat was replaced by the maroon Geneva boat with 1973 Oldsmobile Vista Cruiser
Mike with Larry Weathers launching boat with Lisa ready to go water skiing



From: Jim Rodechko [REDACTED]
To: michelini [REDACTED]
Date: Mon, Jan 29, 2018 3:14 pm

Dear Mike,

I not only was able to open the document you sent, but I was able to print out a copy. I was actually able to read the print-out much more easily than what was on the computer screen. Whenever I scrolled down a notch, it jumped several pages and I was unable to find my place again. The print-out is very nice and I will keep a copy for you.

One comment. On the top of page six you indicate that by late evening Thursday, the flood waters had risen to the point there were boats in the street. I think you mean Friday.

Your report is fascinating. I was wrapped up in it. You provide perspectives that are truly unique.

Anne Marie's analysis of the flood waters on Thursday was much like my own (and I suspect like the analysis of most other people). Everything looked good and there was no problem at all. That ended rudely on Friday morning at six a.m. when Joel Berlatsky called to say the town was being evacuated.

Your being in Harrisburg the day before the flood reminded me of an experience I had in Harrisburg some seven years later at the time of the Three Mile Island "problem." I was the chair of the Pennsylvania Historical Research Conference and we were meeting in Harrisburg (I think at the Holiday Inn Town) when news of the disaster hit. I think I am the only American ever to cancel a historical conference because of a nuclear problem.

Best of everything,

Jim

Version
Final Copy
addenda 1 and 2
Jan. 26, 2018
Pg 6/Day Corrected
Thurs to Friday

DATE: 1/29/2018
TIME: 10:10 AM
PAGE: 1
(170 7/9/12)

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

(DPO 7/9/72)

TRAVEL AND TEMPORARY HOUSING LEASE

DATE OF PA FED CROSS CERTIFICATION
NAME OF LUZERN

THIS LEASE, made and entered into this 28 day of Aug,
1972, between FRANCIS MICHELINI, herein called the "Lessor,"
and FRANCIS MICHELINI, herein called the "Lessee."

WITNESSETH:

The Lessor hereby leases to the Lessee one dwelling unit described as follows:
6501594 TAVROS

4 situated in said State and County on the following described premises:
30 W RIVER ST WB
to be used exclusively for purposes of a family dwelling solely for the Lessee's family for their term duration. The Lessor reserves the right to relocate the unit to other premises at any time.

The term of the lease shall begin on the date hereof and end at midnight on the last day of the same calendar month. This lease shall be automatically renewed for successive terms of one calendar month each, subject to the termination provisions in paragraph three (3) hereof. No rentals will be charged for the first twelve months of occupancy which in the case of this particular lease is terminated based upon fair market value of the accommodations being furnished. At that time rentals shall be charged (50) days before expiration of the rent-free period, unless the lease is terminated earlier for other reasons, the Lessee shall be liable for the rental of the unit to be charged together with the financial penalties.

6. The Lessee agrees to surrender the dwelling and premises in as good state and condition as they were in at the commencement of the term, reasonable use and wear and tear thereof and damage by the elements excepted.

7. The Lessor and the Lessee agree further to the following terms and conditions:

(a.) Personal property provided in the dwelling and otherwise furnished by the Lessor shall be inventoried at the beginning date hereof, and a copy of the inventory of such personal property signed by the parties shall be attached to the lease. At the expiration of the term, the Lessee shall return the personal property in the condition existing at the time of entry; reasonable use and wear and tear excepted, or shall otherwise pay the Lessor the reasonable value for any items not returned.

(b.) The Lessee agrees to permit the Lessor or its agents or employees to enter the dwelling during reasonable hours and, except in the case of an emergency, upon twenty-four hours prior notice for the purpose of making inspections.

(c.) The Lessee agrees to solve necessary repairs to the dwelling and equipment as promptly as possible. Such repairs are not to exceed \$25 and must be accompanied by a receipt so that reimbursements can be made. Repairs in excess of \$25 must receive prior approval of the Lessor. Repairs as the result of the Lessee's abuse or negligence himself, members of his family, or his invited guests will be charged to the Lessee.

(d.) The Lessor reserves the right to make regular inspections of the dwelling to determine whether repairs are needed in addition to those accomplished by the Lessee.

(e.) The Lessee agrees not to make any alterations or improvements without the written consent of the Lessor.



POSTAGE AND FEES PAID
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

U. S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
OFFICE OF THE ASSISTANT SECRETARY FOR ADMINISTRATION
SOUTH MAIN TOWER WASHINGTON, D. C. 20410
116 S. MAIN ST.
WILKES-BARRE, PA. 18704 OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

*Disaster trailer
unit lease
Mr. Francis Michelini
30 W. River St
Wilkes-Barre, Pa*

STAPLES

STAGE AND FEES PAID
OF HOUSING AND URBAN DEVELOPMENT



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
HUD DISASTER HEADQUARTERS OFFICE
116 South Main St.
Wilkes-Barre, Pa.

IN REPLY REFER TO:

DATE OF 7/9/72 TRAVEL HOME TEMPORARY HOUSING LEASE
NAME OF PA RED CROSS CERTIFICATION
NAME OF LUZERN
THIS LEASE, made and entered into this 28 day of AUG
between FRANCIS MICHAEL, herein called the "Lessor,"
and FRANCIS MICHAEL, herein called the "Lessee."

WITNESSETH:

The Lessor hereby leases to the Lessee one dwelling unit described as follows:

6501594 TAVROS
situated in said State and County on the following described premises:
36 W RIVER ST WB

to be used exclusively for purposes of a family dwelling solely for the Lessee's use only for short term duration. The Lessor reserves the right to relocate said unit to other premises at any time.

The term of this lease shall begin on the date hereof and end at midnight on the last day of the same calendar month. This lease shall be automatically renewed for successive terms of one calendar month each, subject to the termination provisions in paragraph three (3) hereof. No rentals will be charged for the first twelve months of occupancy which in the case of this particular lease is 12 months. At that time rentals shall be determined based upon fair market value of the accommodations being furnished. If (30) days before expiration of the rent-free period, unless the lease is terminated earlier for other reasons, the Lessee shall be notified in writing of the rent to be charged together with an explanation of the applicable financial hardship adjustment. Adjustments in rentals shall be made only after consideration of the financial ability of individual occupants to pay their current value.

The Lessor may terminate this lease for cause on any day of the month by giving the Lessee 15 days prior written notice. The Lessee may terminate this lease by giving the Lessor 15 days written notice delivered to the Lessor at HUD SCRATCH OFFICE.

The Lessee shall not sublease the dwelling or any part of the premises. In the event the dwelling is vacated by the Lessee, with or without notice to the Lessor, the Lessor shall have the right to reenter, take immediate possession, and remove it from the premises. Upon such vacation by the Lessee, the lease shall be deemed terminated except that the Lessee shall be liable for any deficiency in rental and damages. If the Lessee vacates said dwelling without giving notice, he shall be liable for damages resulting from vandalism. The Lessee shall not relocate Travel Home from premises described above without prior approval from the Lessor.

The Lessee agrees to keep the dwelling in a clean and orderly condition.

6. The Lessee agrees to surrender the dwelling and premises in as good state and condition as they were in at the commencement of the term, reasonable use and wear and tear thereof and damage by the elements excepted.

7. The Lessor and the Lessee agree further to the following terms and conditions:

(a.) Personal property provided in the dwelling and otherwise furnished by the Lessor shall be inventoried at the beginning date hereof, and a copy of the inventory of such personal property signed by the parties shall be attached to the lease. At the expiration of the term, the Lessee shall return the personal property in the condition existing at the time of entry; reasonable use and wear and tear excepted; or shall otherwise pay the Lessor the reasonable value for any items not returned.

(b.) The Lessee agrees to permit the Lessor or its agents or employees to enter the dwelling during reasonable hours and, except in the case of an emergency, upon twenty-four hours prior notice for the purpose of making inspections.

(c.) The Lessee agrees to solve necessary repairs to the dwelling and equipment as promptly as possible. Such repairs are not to exceed \$25 and must be accompanied by a receipt so that reimbursements can be made. Repairs in excess of \$25 must receive prior approval of the Lessor. Repairs as the result of the Lessee's abuse or negligence himself, members of his family, or his invited guests will be charged to the Lessee.

(d.) The Lessor reserves the right to take regular inspections of the dwelling to determine whether repairs are needed in addition to those accomplished by the Lessee.

(e.) The Lessee agrees not to make any alterations or changes to the dwelling and not to install any equipment or appliances therein without the consent of the Lessor.

(f.) If the Lessee defaults in the payments of rental or other charges or in the performance of any of the covenants, terms and conditions herein contained, this lease, at the option of the Lessor, shall be terminated in accordance with paragraph 3 and the Lessor, may reenter the premises upon the expiration of the 15 day notice period.

(g.) The Lessee acknowledges that the facilities provided herein are temporary, and he agrees to diligently undertake to obtain private accommodations which will permit the release of the dwelling.

5. Lessee certifies that he/she is the owner of the premises described above and authorizes placement of the Travel Home for a temporary housing prior established by the United States Government. Lessee agrees that he/she will not permit any personal indebtedness to become a lien on the paid housing unit and will not attempt to restrain the Lessor from removal. Lessee agrees to allow and maintain a route of progress and agrees for placing and removing the temporary housing unit along and across his/her property to the nearest reasonable access to a public street. This agreement includes the prohibition of structures and barriers upon Lessee's property which would hinder or preclude the normal and usual connecting parking, placing, hitching, or removing of the temporary housing unit.

9. It is understood and agreed that the dwelling herein is provided under emergency conditions as disaster relief with the assistance of the United States of America, herein called the "Government," and that the use and occupancy of the dwelling shall, in addition to the terms and conditions herein set forth, be governed by rules, regulations, decisions, and emergency authority of the Government acting by and through the Department of Housing and Urban Development.

Development. It is further understood and agreed that upon the expiration of the lease agreement, the Lessee's temporary housing need under the provisions of Public Law 91-606 "Disaster Relief of 1970" is deemed to be satisfied. However, if Lessee experiences extended delay in relocating to his/her permanent residence and the Lessor has vacant mobile homes available in a group park, Lessee may be reassigned. Lessor will make no such reassignment until all displaced families are housed and then only upon availability of vacant units.

10. In the event the premises herein leased have been occupied prior to the date hereof upon an Occupancy Permit, this lease shall supersede such Occupancy Permit.

Lessee hereby agrees to hold and save the United States Government harmless from any and all causes of actions, suits at law or claims or demands or from any liability of any nature whatsoever out of the performance of this lease agreement.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands and seals the day and year first above written.

In the presence of Robert M. [Signature] Lessee(s) Francis Michael [Signature]

Lessor: Department of Housing
Urban Development

INFORMATION SHEET

TEMPORARY REPAIRS TO HOMES
(Homeowners Only)

9/4/72

1. The Corps of Engineers in cooperation with the Department of Housing and Urban Development (DHUD) may in certain cases perform temporary repairs to homes on request. Application for this program should be made through DHUD.
2. Once the homeowner has requested to participate in the program, the decision to make the temporary repairs will be made by the Corps of Engineers in view of the extent of repairs required. If the required repairs are deemed by the Corps of Engineers to be extensive, the repairs will not be offered to the homeowner. Another factor which the Corps of Engineers will consider is the ability of contractors to perform this work on a timely basis.
3. While the Corps of Engineers is preparing estimates on required repairs, the homeowner will not give up his or her place on any housing list. However, once the Corps of Engineers offers the program to the homeowner and the homeowner accepts it, the homeowner will be removed from any housing list he or she may have been on.
4. Authorized temporary repairs are as follows:
 - a. Steam cleaning of the home.
 - b. Extermination service.
 - c. Check and repair of all plumbing. If replacement of fixtures is required, standard fixtures will be used.
 - d. Check and repair of the electrical system. No increase in service capacity will be provided unless the homeowner indicates his intent to buy a new water heater or stove requiring more power. If replacement of fixtures is required, standard fixtures will be used.
 - e. Provision of home security through repair of external doors, external windows, and cellar doors.
 - f. Repair of major safety hazards in the house, such as broken stairs.
 - g. Check and repair of the heating system (to include replacement, if necessary).
 - h. Check and repair of the hot water system.
 - i. First floor insulation.
5. The following work will not be done:
 - a. No work on interior floors
 - b. No work on ceilings.
 - c. No work on air conditioning or fans.
 - d. No replacement of appliances.
 - e. No painting, wallpapering, plastering, or paneling.
 - f. No yard work.
6. The Corps of Engineers will not be responsible for providing any utility hookup, to include gas, electricity, telephone, water, or sewage. These hookups remain the responsibility of the appropriate municipality or private company.



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
HUD DISASTER HEADQUARTERS OFFICE
116 South Main St.
Wilkes-Barre, Pa.

IN REPLY REFER TO:

Date: September 5, 1972

Dear Travel Trailer Occupant:

HUD records indicate that you are presently living in a camper. The camper is not adequate for residential use in cold weather, since it is not fully winterized. We are, therefore, writing to insure that you have adequate alternate housing for the winter.

If you cannot be back in your home with heat by November 1st, you should apply for an alternative form of temporary housing. These alternatives include either the Home Repair Program or a Mobile Home on a Group Site.

Enclosed with this letter is an information sheet on the Home Repair Program. The Program is basically intended to repair heating and hot water systems, plumbing and electrical systems, external doors and windows, and major safety hazards.

If there is extensive damage to your home and the Repair Program is not adequate, you should seriously consider applying for a mobile home on a Group Site.

To transfer your application to either of these Programs, call 829-2696, 829-2697, or 829-2698. The deadline for these transfers is Saturday, September 9th.

Sincerely,

Barbara Milligan
Barbara Milligan
Officer, Special Programs

jk

It is understood and agreed that the existing herein is provided under emergency conditions as disaster relief with the understanding that the use and occupancy of the existing herein is subject to the terms and conditions hereof. The Government acting by and through the Department of Housing and Urban Development.

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INTRODUCTION TO PERSONAL EXPERIENCES RELATIVE TO THE
HURRICANE AGNES FLOODING FROM WEDNESDAY JUNE 21 TO
MONDAY JUNE 26th, 1972 (written by Dr. Francis J. Michelini)

Shortly after assuming the presidency of Wilkes in 1970 I had been appointed by Governor Milton Shapp to a newly formed "Governor's Science Advisory Committee (GSAC)". As a business man Governor Shapp had been one of the early entrepreneurs in the rapidly expanding electronics field and was very conscious of the dramatic changes in business and industry that would result. In entering Pennsylvania politics one of his goals was to make Pennsylvania a leader in this transition. He was already aware of the research initiatives in our major universities and enlisted the support of faculty and administrators familiar with those activities to serve as advisors to his office. There were appointees from Carnegie Mellon, Penn State, Lehigh, U. of Pennsylvania, U. of Pittsburgh plus others whose names must be in a file somewhere. I do remember Dr. Tom Fox from CMU was the first Chair of GSAC.

I had spent a year on leave from Wilkes at the National Science Foundation in Washington and was serving on the Board of the Pennsylvania Association of Colleges and Universities at the time and I believe my links to those organizations led to my appointment to GSAC.

Coincidentally, Dr. James Toole, Chair of the Wilkes Engineering Department, had been actively involved on the planning committee of a National Conference scheduled to be held in Harrisburg June 22 and 23rd. The GSAC members scheduled their meeting to overlap with the national organization since many of them had similar interests. Jim and I took separate cars since I was planning to return to campus as soon as my meeting was over but we were together on Wednesday, June 21st in Harrisburg.

Interestingly that day, Harrisburg radio was reporting flood alerts and before going to bed I called Anne Marie at home in Wilkes-Barre to ask how the river upstream was faring. She assured me that everything was fine and looked out the window at the river from the upstairs bedroom and said "the river looks pretty low".

The following table of data regarding river levels is instructive, and I might say, absolutely mind boggling.

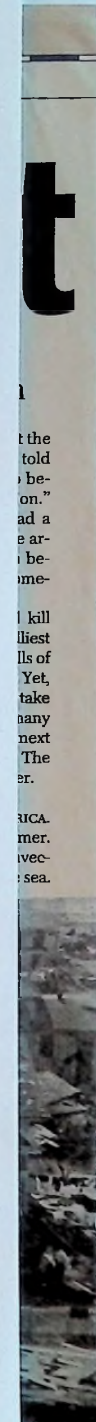
Date	Day	Time	River Stages (in feet)
June 21, 1972	Wednesday	10 p.m.	4.30
June 22	Thursday	7:00 a.m.	8.30
		4:30 a.m.	17.16
		10:00 p.m.	24.80
June 23	Friday	1 a.m.	28.90
		4 a.m.	32.30
		7 a.m.	35.38
		9 a.m.	36.70
		10 a.m.	37.20
		1 p.m.	38.50
		6 p.m.	37.50
June 24	Saturday	10 p.m.	38.50
		9:30 a.m.	40.00
		1:30 p.m.	40.35
		7 p.m.	40.60
June 25	Sunday	10 p.m.	40.50
		7 a.m.	39.00
		1 p.m.	36.00
		8 p.m.	32.30
June 26	Monday	7 a.m.	24.22
		5 p.m.	19.82

The best publication of the many I accumulated and donated to the Wilkes College Archives is a 200 page publication compiled and edited by Carl J. Romanelli and William A. Griffith published by Media Affiliates Inc. of Wilkes Barre. They provide the most complete overview of the storm origins and collective path through New York state and flood data that resulted in the flooding of the Susquehanna that I have seen. It truly is, as titled, "A Complete Pictorial and Written History of the June, 1972, Flood in Wyoming Valley."

My purpose in this writing is to document my personal experiences so reflective of many persons caught up in a magnitude of a disaster never foreseen or experienced by any of our residents before or since. I will describe the sequence of activities during that period of and ask your indulgence for memory gaps or time lines that may overlap. They were not normal days.

Thursday morning in Harrisburg, shortly after 6 a.m. I received a phone call from Anne Marie in a state of shock, saying, "Mike, emergency sirens are going off and police cars are going up and down the streets saying the city is being evacuated because the river is rising rapidly and flooding is expected."

There was controversy in post flood analysis of procedures about when and why Civil Defense officials delayed warning residents if they knew the river was going to reach flood stage the evening before. The data showing predicted river levels did indeed predict flooding by late Wednesday evening but General Townend made the decision that evacuation during the night hours would be far more confusing and dangerous to the population than waiting until early morning when the sun was rising and the fear factor of darkness was minimized. From what I saw as human behavior in crisis, after we got out in the boats and started to get rescue calls, I am convinced Gen. Townend made the right decision. More about that later.



Volunteers were being called for to join in the sand bagging efforts to raise the flood protection levels and Anne Marie and the girls immediately evacuated to a former neighbors home on Dana street , well above any possible flood level.

I called Jim Toole and we immediately got our cars and headed back to Wilkes-Barre. There were no cell phones or GPS or road alerts in those days but we knew that heading upriver on Rt.15 along the river was not an option. These were pre Interstate highway days and we both knew we had to head east out of Harrisburg, away from the river, and find passable roads North to get home. Jim had a big Cadillac and I was driving a normal sedan and that was the fastest driving I ever did in my life, following Jim Toole back to campus.

I recall arriving back on campus between 9:30 and 10 a.m. and the dikes were alive with hordes of people filling and placing sand bags but it was clear that the river was going to win. The water was visibly rising and about 11 a.m. the earthen part of the dike system below the campus area where the steel piling ended finally was topped and began eroding from the back side. Once that breach occurred that section of homes on Riverside Drive, Stanley street, Charles street, and all of South Wilkes-Barre were in the direct line of the powerful flood currents and completely inaccessible. The evacuation plans had worked and it is amazing that very few lives were lost during the flood disaster in Wilkes Barre.

While all that was happening I went back to 30 West River to make sure the family was gone then started to circle back through campus buildings to make sure there were no stragglers left in danger. I met Al Groh in the theater building and found he had disconnected circuit breakers and moved a bunch of portable lights to the lobby steps he thought would be out of the waters range. I told him he had to go immediately and did he know if anyone else was in the building. He said he had seen Bill Gaspparo, the Chairman of the music department in that wing of the Darte Center.

I headed into the building calling for Bill and heard a voice from the basement stairwell. I ran down to the basement and see Bill with a flashlight shining on the electrical circuit box turning all switches off. That made sense to me but after all circuits were off he started waving his flashlight around the basement. I suddenly realized that fountains of water were shooting up about five or six feet through cracks in the concrete floor and I yelled to Bill, "We've got to get the H--- out of here." His reply was, "I'm looking for the cat. I saw him come down here." That was the first and last time that I gave an order to a WW II and Korean War veteran screaming at him to wise up and head for the stairs.

From the Dart Center I headed for the library and found students and staff had formed a line from the basement rare books vault up the steps to the first floor level where they were stacking them on tables. Little did we know that the water level would inundate the first floor. I got in the line handing books up the stairway and was there when the final evacuation sirens went off. That was the clear signal that the dikes had been breached and lives were now at risk. The campus was totally evacuated by noon on Friday. Post flood pictures of the library show those stacks of books left on the stairway when we stopped everything and ran to higher ground.

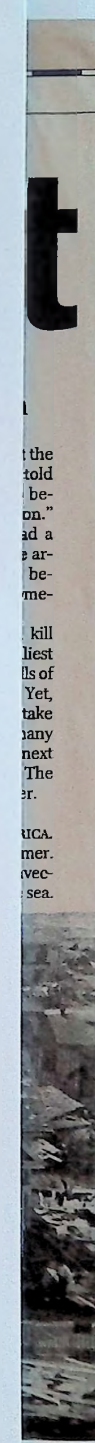
What I did not learn until post mortem analysis of the flooding was that when the earthen portion of the dike gave way it created a sea of mud that eddied back around the dike and began the flooding of the Wilkes campus heading "up river". Post flood photos on campus show about four inches of mud on table tops in the dining hall and all 58 buildings had mud deposited in basements and first floors. Of course all carpeting was soaked and the difficulties associated with cleanup were "enormously" complicated because of the nature of mud soaked water damage.

By late evening on Thursday the flood waters had raised to a level in the streets that boats were able to operate on the water. The two college boats were assigned to management by the Ross Street fire house personnel. The Ross Street facility was flooded but the personnel and equipment were deployed from the bridge intersections at Northampton Street and the Park Avenue bridge. These were pre cell phone days and I have no ideas how communication was established and maintained. All I know is I had a fire team in my boat that always told me where we were needed.

The boat drivers learned early on that navigating a flood was totally different than navigation on Harvey's Lake or the Great Egg Bay waters in Ocean City, NJ. City streets under moving water could be very dangerous. Underwater hazards included fire plugs, parking meters, street signs, cars, and overhead wires that were no longer "over head". Practical lessons were learned. Radio antennas were a Godsend in avoiding a propeller battle with the roof of a car or truck. A visible fire plug meant "turn around", water is getting shallow. The first experience with a wake causing crashing store windows and the resulting store manikins scared more than one boat captain to move to rescue a "body", that turned out to have floated out of a broken store window.

The boats had 50 horsepower engines which is fine for fishing or smooth bay and channel water skiing, but the flood current was so powerful that we learned early on to stay away from River and Franklin Streets because our boats could be swept away out of control.

Our first assignment just before dark was people rescue. Many had refused evacuation orders during the day for a variety of reasons. It took quite a few disasters in later years before civil defense leaders realized the people "would not" leave their pets behind. It was only



after the New Orleans hurricane flooding after the turn of the century that federal disaster rules recognized that and finally permitted rescuers to take pets into the boats during disasters. More lives were lost than officials care to admit but my experience about love of pets stemmed from my first rescue. The call directed us to South Wilkes Barre and I remember it was just beyond the intersection by the Giunta Pharmacy near Academy Street. There was a gas station across from the pharmacy and one of my everlasting flood impressions is of a flashing red light "underwater" that kept going on and off, on and off. I don't know how many hours the battery lasted but my mind can still reconstruct that scene.

Our objective was a home beyond that intersection and flood photos always tend to include a porch roof and second floor window with people waving to be rescued. Again, I can still see that mental picture of a very large woman being helped out of the second floor bedroom window followed by a fireman lifting out a full grown police dog behind her. She required lots of help to make it into the boat but that dog knew exactly what was happening and just followed her down into the boat without flinching. I still get a lump in my throat thinking about that caring animal staying at the side of his charge through an experience many humans could not handle.

Our boats were not large and we were constantly on the move back to our bridge base ready for our next assignment. During the next morning daylight hours we were assigned to take a team of PP&L guys assigned to go up and down assigned streets and with long poles disconnect the circuit breakers high up on power line poles. My understanding was that this was necessary to prevent short circuiting that could start fires in homes when power was restored and also to reduce the surge of demand on the power supply lines.

What I do know is that as soon as we had access after the waters receded, Anne Marie and I were back in the president's home at 30 West River Street. A small power generator provided for a few lights and small refrigerator was set up to permit us to be back on campus as soon as the water receded and we were allowed access to the campus. Somehow I felt my physical presence was important with a baseball bat at the bedside we were back on campus as soon as officials allowed us in.

This is only relevant because when dark came it was very, very dark! It is difficult to describe "total" darkness in a city. We were on the second floor and suddenly realized that lights were on next door in Waller Hall, a women's dormitory. That was scary! Having been out all day disconnecting circuit breakers on power lines had made an impression of real danger and I was sure that building was going to catch fire in minutes. I frantically got dressed ran the couple of blocks to the firehouse where they told me to wait it out. Early the next morning a crew found we had missed the circuit breaker because it was hidden behind tree branches.

No Harm, No Foul I guess but we never forgot that night.

Back to day 2 in the boat. For most of the day we were switched back and forth in setting up the boat to be prepared to fight fires, which I found out are not uncommon occurrences during floods, and rescue operations which continued off and on. We also ferried officials who needed access and some political figures who felt it important to be seen in a boat.

One memorable event occurred when U. S. Senator Richard "Dick" Schweiker showed up at end of the street serving as the boat ramp and was at the water line where I was docked. To be polite I asked him, "Senator, would you like a ride to see what the flood is like?" His response endeared him to me for life. He simply said, "You have more important things to do than ferry me around to see the sights but Thank You.

That day was exhausting and I remember tying up the boat at the Northampton Street bridge and walking up the hill to the front lawn of the Jewish Synagogue and laid down and fell fast asleep. I think I must have slept for two or three hours but I woke up refreshed and soon was back in the boat.

As I indicated earlier the paired boats were occasionally set up as a fire team and as dark approached that was our assigned role. Two firemen were in each boat with equipment paired to fight fires. Our partner boat had the water pump and connections to pick up river water and pump it up to pressure for hose stored in the partner boat which was my boat that night. My two firemen had fairly short coiled hose and spray adapters designed to float, if necessary, to a fire area. I learned all about that later. For the most part my one and only job was to drive the boat to wherever it was needed and monitor position for boat safety in close quarters.

Late that night or early Saturday morning we were dispatched to the corner of Pennsylvania Avenue and Northampton Street across from the B'Nai Brith Apartments. Someone had called in a report of seeing fire reflected off the water of the warehouse facility across the street. We arrived at the corner and the water level was close to the maximum reached by the flood. The reflection of a small fire from an electric circuit box in the rafters supporting the second floor could be seen and the firemen quickly deployed their equipment. Our partner boat lowered its water pickup hose into the water and the water connection to my boat with the fire hose was deployed ready to be floated into the building under the second floor where it could extinguish the fire which already had started burning the wood and beams of the second floor.

The sequence was to collectively get water on the fire and my men were set and ready to break the glass windows to the building when the pump was ready to provide the water. The teamwork was well orchestrated and they knew what they were doing.

I nosed my boat in close to the building so that my team could float the water dispenser into position to get water on the fire. We heard the pump in our companion boat start up and pressurize the hose and my guys promptly bashed in the window and floated the nozzle into the building to spray the fire from beneath.

The next few minutes were like an eternity. As the nozzle was floating in the pump engine suddenly died and there was no water pressure in the hose. Those firemen tried furiously to re-start the pump but could not get it to fire up again. In those instants of time the fresh air provided by breaking the window caused the fire to explode. Smoke was drawn out the broken window and in seconds we were totally enveloped in a dense cloud of smoke. I became totally disoriented. Totally! I was panicked beyond belief. I had no sense of orientation. There was no up or down dimension to my world. Then pure instinct kicked in.

I knew the building was there and the boat was floating even if I could not see the building or the water. I did realize that if I didn't get away from the building we could be suffocated or burnt by the fire which was building rapidly. The boats were still connected by the fire hose so I think I just rotated the engine to turn me in a direction away from the other boat and hit the throttle to get out of there. As my mother would say, my guardian angel was looking out for me. We broke out of the smoke with the other boat following behind us and headed back to our ramp to report in. No one made a big deal of the pump engine stalling for we had done our best. To my knowledge that was never formally reported but we were there when the building fire started and, I dare say, inadvertently helped it along.

There was nothing we could do in the darkness but as soon as dawn broke heads got together to figure out how to fight that fire which had spread furiously through the night and threatened the entire

down town area if not brought under control. I don't know who came up with the idea but a large fire hose was hooked up to a working hydrant on Northampton street near my Jewish Temple resting place and dragged down to the waters edge where we tied it to the water ski anchor hooks. All I remember is that I ran the engine at full throttle dragging that hose through the rapidly flowing flood water back to that raging fire. The two firemen hooked a splitter hose to the main hose and proceeded to climb a telephone pole in the alley and got on to the roof of the adjacent building to fight the fire. There are photographs in a number of the flood publications showing those firemen on that roof with two hose streams of water directed at the burning building. There is no doubt in my mind that those brave men kept those flames from jumping that alley way which would have allowed it to devastate the buildings on South Main street.

Once the firemen were up on the roof fighting the fire I moved the boat across Northampton street and tied up at the portico of the B'Nai Brith apartments to keep an eye on them. I knew that if they could not keep the fire from jumping the alley they would have to be hauled off the roof very quickly and I spent the rest of the day just keeping an eye on them.

Photos show many boats in that area of Northampton street during the fire but I think all they could do was observe the progress of the fire. Some slides I have seen taken by a Navy or Coast Guard helicopter show that the wind direction of the flames helped immensely in keeping that fire from devastating the main area of down town Wilkes-Barre.

I know that we spent another day on the water and mainly patrolled the flooded areas. On one patrol I remember contents of the storage warehouses of a huge supply of boxes of cigars and cigarettes floating down the street and the fireman reaching over and loading

the boat with them. I kept reaching back and throwing them off the boat on the other side and yelling at them to stop or we would be accused of looting! Shortly after that while patrolling up Main street toward the square I bumped into something and thought I had hit a body floating in the water. It turned out to be a manikin that had floated out of a broken store window and I was not the first one to experience mild panic before realizing it was not a fatality from the flood.

I have very little memory of the flood waters receding to the point where the boats were removed from the water. I think the college crew and the firemen retrieved the college boat with the Jeep and its' trailer and they must have also picked up mine with my car and trailer. I believe it was Monday, June 26th because I was scheduled for a TV appearance with Dan Flood from his headquarters in Avoca and I pulled the boat on trailer up on the grassy area at the loading dock side of the fine arts building. I changed clothes at the house to go up to the TV studio and when I returned the boat and trailer were gone! I alerted the state police immediately but the boat was never located. It served me well. The college environmental science boat saw many years of hard use and is still garaged somewhere on campus. I have given it many a fond pat on the hull when it was parked behind the athletic building lockers over in Kingston.

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As anyone who knows Wilkes history is aware, the college acquired many of the historic riverside mansions bequeathed from family members through bequest and others via purchase when available. King's College, up river a few blocks from Wilkes was in an area designated for redevelopment and had approximately five buildings basically designed as high rise for college classrooms and dormitories. The campus avoided the muddied backwash of flood water and damage was therefore limited primarily to their library basement area. The contrast in damages was striking in photos of that north end area of the city in the County Courthouse area.

The result was that the two related colleges experienced the flooding with significantly different levels of damage. Other educational facilities in the river communities included Wyoming Seminary, schools, churches, the major hospitals, Nesbitt in Kingston, Mercy in Wilkes-Barre. The list could go on and on but the point to be made is that every non profit activity with a physical presence in the community was basically devastated. This circumstance brought all public services and governmental officials into a collective community effort that involved every level of government.

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Time magazine/August 30, 1999

BOOK EXCERPT

The Deadliest

In a gripping new book, Erik Larson recounts the fury and folly around the turn-of-the century hurricane that destroyed Galveston



IT HAS BEEN AWFULLY QUIET IN THE DEEP salt—until now. Hurricane season officially started on June 1, but till last week, the Atlantic produced only one tropical storm—a humble one named Arlene. Last weekend, however, the hurricane named Bret appeared on the Gulf of Mexico, and the tropical storm called Cindy gained intensity in the eastern Atlantic, off the Cape Verde Islands, where many storms are seeded. The dangerous Cape Verde season is now under way, and from here on the odds of hurricanes forming will increase daily until Sept. 9, historically the day of greatest hurricane activity. As in past years, most of us will watch the approach of these storms snug in the belief that satellites, reconnaissance aircraft and computers have so defanged hurricanes that none can ever again cause large-scale death.

Ninety-nine years ago, a weatherman named Isaac Monroe Cline, the chief meteorologist in Galveston, Texas, espoused a similar view regarding the threat hurricanes posed to Galveston, which in his day was a lovely, gleaming city that seemed destined to become the New York of the Gulf. Cline, the lead character in *Isaac's Storm*, a new book by TIME contributor Erik Larson, embodied the hubris of the past turning of the century. A pioneering

weatherman, he thought he knew all there was to know about the behavior of storms. In an article in the *Galveston News*, he told readers no hurricane could ever seriously harm the city. To believe otherwise, he wrote, was to entertain "an absurd delusion." Early on the morning of Saturday, Sept. 8, 1900, Cline had a change of heart. He stood on the Galveston beach timing the arrival of deep-ocean swells larger than anything he had seen before. He did not fully understand their meaning, just that something extraordinary seemed about to occur. He was correct.

Before the next dawn, a monumental hurricane would kill 8,000 people in Galveston alone, and become the nation's deadliest natural disaster, its death toll far greater than the combined tolls of the Johnstown flood and the 1906 San Francisco earthquake. Yet, incredibly, the storm would fall from national recollection and take up residence mainly in the nightmares of hurricane experts, many of whom believe that someday, maybe next month, maybe next year, an intense hurricane will again kill on a grand scale. The Galveston hurricane, the experts agree, is a storm to remember.

IT BEGAN AS A PLATTE OF TORTURED AIR SLIPPING FROM WEST AFRICA. Scores of such "easterly waves" exit the continent every summer. Most fail to intensify, but a few become carousels of "deep convection," huge thunderstorms, rotating counterclockwise over the sea.



STAPLES

of the business district with water. The same north wind, however, held another and far more dangerous surge out at sea. That afternoon, however, the wind shifted, as it must in a tropical cyclone. The Gulf sprang forward as if propelled by an uncoiling spring. A dome of water at least 20 ft. high surged ashore under rapidly escalating winds. The waters of the sea and the bay met over the city and turned rooftops into islands.

No one knows what velocity the wind reached. The bureau's anemometer blew away at 100 m.p.h. The wind neatly sliced off the top floor of a bank, leaving the rest of the building intact. It stripped slate shingles from houses and turned them into scimitars that disemboweled men where they stood. Atmospheric pressure fell so low, a visiting British cotton official was sucked from his apartment trailing a slipstream of screams from his wife. The storm surge drowned an entire train and demolished an orphanage, killing 90 children. Together, the wind and sea destroyed brand-new artillery emplacements built to withstand bombardment, and scoured whole neighborhoods from the face of the earth.

THE FIRE OF MOURNING

AT 6:30 P.M., ISAAC CLINE, EVER THE OBSERVER, walked to the front door of his house to take a look outside. He opened the door upon a fantastic landscape. Where once there had been streets, there was open sea. He did not see any waves, however, for behind his house the storm surge had erected an escarpment of wreckage three stories tall and several miles long that acted as a kind of seawall. It contained carriages, furniture, the streetcar trestle and rooftops that floated like the hulls of dismantled ships. It also carried corpses, hundreds of them, perhaps thousands. The wind and sea now pushed this wall toward Isaac's house. If not for the thundering wind, Isaac would have heard it coming as a horrendous blend of screams and exploding wood.

But something else caught his attention, as it did the attention of nearly every other soul in Galveston. Suddenly, as he stood at his front door, the surface of the sea rose four feet in four seconds. This was not a wave, but the tide itself. And it continued rising.

For those inside Isaac's house, it was a moment of profound terror (although Joseph claimed to have been utterly calm). Four feet was taller than most of the children in the house. Throughout the city, parents rushed to their sons and daughters. They lifted them from the water and propped them on tables, dressers and pianos. People in single-story houses had nowhere to go. The sudden rise of the sea meant death. For Isaac and his wife, as for thousands of parents throughout Galveston, suddenly the prospect of watching their children die became very real.

The houses fell gracefully at first. One witness said houses collapsed into the Gulf "as gently as a mother would lay her infant in the cradle." It was when the current caught the structures and swept them away that the violence occurred, with bedrooms erupting in a tumult of flying glass and wood, rooftops soaring through the air like monstrous kites.

The barrier of wreckage pushed before it an immense segment of the streetcar, which struck Isaac's house with terrific force. Isaac was at the center of the room with his wife and his six-year-old daughter Esther Bellew, whom he always called his "baby." A wall came toward him. It propelled him backward into a large chimney. He entered the water. Something huge caught him and

drove him to the bottom. Timbers held him. He lost consciousness.

He woke to turmoil. Rain struck like shrapnel. He was afloat, his chest caught between two timbers. He coughed water. He sensed there was something he had to do. It was like waking to a child's cry in the night, then hearing only silence. He sensed absence.

ON SUNDAY, THE U.S. WEATHER BUREAU IN WASHINGTON telegraphed this question to the manager of the Western Union office in Houston: "Do you hear anything from Galveston?"

First came this ominous reply: "We have been absolutely unable to hear a word from Galveston since 4 p.m. yesterday..." And then this report: "First news from Galveston just received by train, which could get no closer to the bay shore than six miles, where prairie was strewn with debris and dead bodies. About two hundred corpses counted from train. Large steamship stranded two miles inland. Nothing could be seen of Galveston..."

SUNDAY MORNING, SO MANY CORPSES LITTERED THE LANDSCAPE that civilized burial was deemed impossible. Galveston's relief committee ordered the bodies dumped at sea. Crews loaded corpses by the hundreds into a large barge, but by the time the barge reached its dumping ground 18 miles into the Gulf, darkness had fallen. The crew spent the night among arms and legs brought back to life by the gentle rocking of the sea. In the morning, they weighted the bodies and cast them into the water.

But the bodies came back ashore. The relief committee now ordered that all corpses be burned upon recovery. The fires began almost at once, with the assistance of the city's fire department. Soon the nights were rimmed with the orange light of countless pyres. The air stank of death for weeks. Human ash sifted from the sky. Emma Beal, 10 at the time, watched one of the "dead gangs" burn bodies near her house. As one body entered the fire, an arm shot up as if pointing into the sky. Emma screamed, but kept watching, and paid for it with nightmares that left her writhing in the dark.

Isaac survived Saturday night—although barely—and only after experiencing his own unbearable loss. He had found his daughters alive in the waters, but his wife Cora had vanished in the storm surge. While the children prayed for their mother's return, he knew his wife had perished. Each evening he toured likely places where her body may have lain. But he would not find her till Sept. 30, when relief workers discovered a dress tangled in the debris of what they concluded was Isaac's house. Within the clothing were the remains of a woman. He recognized her only from a wedding ring and the diamond he had given her at their engagement.

FOR A TIME THE MESSAGE OF THE STORM SEEMED TO HAVE BEEN heeded. Galveston built a seawall, then raised the elevation of its streets and surviving buildings, even its cathedrals. But memory faded quickly. Today grand new houses rise on stilts on the island's West End beyond the protection of the seawall. The once barren sea-level prairie that stretches from Galveston through Houston is now home to about 3 million people. To hurricane experts, it is one of the most vulnerable regions in America, where even today an intense hurricane could cause megascale death. Today's meteorologists know a lot more about hurricanes than Isaac Cline did in 1900, but this knowledge, far from conjuring the hubris expressed by Cline, has led them to recognize that hurricanes remain inscrutable giants capable of tricks that can defy even satellites and computers—tricks like suddenly intensifying in the hot waters off Cuba and catching a city by surprise.

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The seas were hot. The U.S., temperatures had rise Heat suffused a vast swath o Canada, territory that in tha ca's population. There was fered. Suits were black woc black-enameled bodies. Trai New York City, three childr capes where they had hoped of crickets overwhelmed W Lightning struck more peop there had been no hurricanes and raising cold water from l pool of gasoline waiting fo match.

In Washington officials Weather Bureau suffered too tined their struggle to build c

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page 2

Storm

For the first week of its existence, the hurricane was barely a tropical storm. A few ship captains spotted it as it moved along a shallow arc just below the Tropic of Cancer, but none saw it as terribly ominous. In the absence of radio or wireless telegraphy, captains knew only the weather in their immediate vicinity. None could know that just a few hundred miles away, the wind was blowing in exactly the opposite direction, a juxtaposition that any captain today would recognize as the early dance of a tropical cyclone.

The seas were hot. The land was hot. Throughout much of the U.S., temperatures had risen into the 90s and often broke 100. Heat suffused a vast swath of country from the Gulf of Mexico to Canada, territory that in that time encompassed most of America's population. There was no air conditioning. Everyone suffered. Suits were black wool. Carriages had black canvas tops, black-enameled bodies. Trains were ovens. Passengers roasted. In New York City, three children died when they fell from fire escapes where they had hoped to find a breeze. A strange migration of crickets overwhelmed Waco, Texas, and halted its trolleys. Lightning struck more people than ever before. So far that year there had been no hurricanes to cool the surface by roiling the seas and raising cold water from below. The steaming Gulf was like a pool of gasoline waiting for a meteorological match.

In Washington officials of the U.S. Weather Bureau suffered too, as they continued their struggle to build credibility and

overcome past errors and scandals. The bureau was just emerging from 20 years of trouble and ridicule. It had miscalled two deadly blizzards. Its chief financial manager had embezzled a fortune. Its weather observers had been implicated in sex scandals, grave robbing and other sordid matters. To prevent further embarrassment, the bureau had banned the word tornado, for fear that if used in forecasts, it would cause too much panic. In the belief that centralized control of forecasts reduced the risk of error, the bureau insisted that all storm warnings come only from headquarters. Any observer who broke that rule risked his career.

To help predict hurricanes, the bureau had strung a necklace of weather stations throughout the Caribbean, but the network's imperious officers seemed more intent on alienating the people of Cuba and the West Indies than in watching for signs of danger. They treated Cuban weathermen as if they were aboriginal witch doctors, even though Cuban scientists had pioneered the art of hurricane prediction and were revered by the citizenry. Deep down, the U.S. observers feared the Cubans and their skill, and in the summer of 1900 engineered a ban within Cuba of any telegram that so much as mentioned the weather, unless it came from the bureau—this during hurricane season, when all of Cuba looked to its homegrown weathermen for advice and comfort. The ban occurred as the tropical storm spun toward Cuba. It dumped biblical amounts of rain on Cuba but brought only moderate winds. The U.S. observers, technocrats of a brilliant



ISAAC CLINE Did he do enough to warn the city of disaster?



THE AFTERMATH A 20-ft.-tall surge swept a wall of debris and bodies across the city

STAPLES

STAPLES

N.B.

This is the last page to read

Pg. 3

BOOK EXCERPT

new age, saw nothing to be concerned about. The Cubans, however, were suspicious. Poets of the air, they watched the sky as the storm left the island and saw in its red lights and wispy clouds the spore of disaster. Father Lorenzo Gangoite, a leading Cuban meteorologist, called these atmospherics "clear indications that the storm had much more intensity and was better defined than when it crossed this island."

Tweaking the U.S. observers, he wrote, "Who is right?"

SOON AFTER LEAVING CUBA, THE STORM UNDERWENT AN EXPLOSIVE intensification: one moment a nondescript tropical storm, the next, a hurricane of an intensity no American alive had ever experienced. Sea captains were the first to experience its new incarnation. On the morning of Wednesday, Sept. 5, the steamer *Louisiana* left New Orleans under bright skies. By the next afternoon, its captain was fighting winds of 150 m.p.h. Horizontal rain clattered against the bridge with the sound of bullets against armor. Wherever the wind gained entry, it spoke, moaning among the cabins and corridors like Marley's ghost. The hull flexed. Beams twisted. The captain watched his barometer fall to levels he had never seen. The master of another ship, the *Pensacola*, summoned a passenger to his barometer. "Look at that glass," he said. "Twenty-eight point fifty-five. I have never seen it that low. You never have, and will in all probability never see it again." It continued to fall.

In 1900 the Weather Bureau enciphered its observations before transmitting them over telegraph lines. It had a code word for winds of 150 m.p.h.—"Extreme"—but no one in the bureau seriously expected to use it. The bureau's forecasters, prisoners of the expected, believed tropical cyclones always curved toward the northeast to end up in the Atlantic off the eastern seaboard. The official forecast for Galveston for Saturday, Sept. 8, 1900, called for rain followed by clearing.

DEATH IN THE WATER

THE SKY SEEMED TO BE MADE OF MOTHER OF PEARL," a visitor to Galveston said of that Saturday morning, "gloriously pink, yet containing a fish-scale effect which reflected all the colors of the rainbow. Never had I seen such a beautiful sky." But the great swells that morning made Isaac Cline uneasy. Ordinarily the Gulf was as placid as a lake, a quality that had seduced engineers into building great Victorian bathhouses on stilts well into the sea. A streetcar trestle snaked over the surf. Many years later Cline would write, "If we had known then what we know now of these swells, and the tides they create, we would have known earlier the terrors of the storm which these swells told us in unerring language was coming."

The hurricane had a forward speed of about 10 m.p.h., but its powerful winds were producing waves that moved at 50 m.p.h. and reached the Texas coast long before the storm itself. They rose within the storm as jagged ship killers, but once beyond the storm's circle of influence, they settled into long, slow undulations of the kind that startled Columbus on his very first voyage to the Indies. Although they lost their jagged shape, they retained the

energy originally transferred to them by the wind. As they met the gradual slope of the Texas coast, their leading edges slowed and the trailing water piled up, creating waves of incredible heights.

Upon leaving the beach, Cline drove his sulky to his office at the center of town. He checked the station's instruments and found only a slight decline in barometric pressure. "Only one-tenth of an inch lower," he wrote. The bureau's Central Office had at last sent orders to hoist a storm flag, but this telegram gave no cause for alarm. Such warnings in August were routine. There was nothing routine about the sea, however, or the ominous feel of the morning. Isaac drove his sulky back to the beach and again timed the swells. They were heavier now and pushed seawater well into the neighborhoods nearest the beach. He returned to his office and composed a telegram to Willis Moore, chief of the bureau in Washington. He ended the telegram: "Such high water with opposing winds never observed previously."

According to popular legend and his own memoirs, he raced to the beach and warned thousands to flee. There is evidence, however, that his response may have been more ambivalent. Saturday morning, for example, a sea captain, George B. Hix, stopped by the weather station to ask about the strange weather, and was told by one of Cline's colleagues "there was no cause for uneasiness." The storm was only a harmless "offspur" of a storm that had struck Florida a few days earlier. "Well, young man," Hix snorted, "it's going to be the damndest offspur you ever saw."

The rest of the city did not share the captain's anxiety. Adults and children alike greeted the storm with delight and converged on the beach, some in bathing suits. The surf rocketing off the streetcar trestle was easily as good as a fireworks display. A great crowd gathered at the Midway, a 10-block stretch along the beach with cheap restaurants and souvenir stores. The sea began to climb into the city. "As we watched from the porch," one woman wrote, recalling her childhood experience, "we were amazed and delighted to see the water from the Gulf flowing down the street. 'Good,' we thought, 'there would be no need to walk the few blocks to play at the beach; it was right at our front gate.'" It was a wonderful spectacle, until the waves began tearing apart the bathhouses and the shops of the Midway. Suddenly, one mother recalled, "it wasn't fun anymore." A visiting businessman who had taken shelter in a train station wrote that he first realized the true extent of the disaster "when the body of a child floated into the station."

TELEGRAPH LINES FELL. THE CITY'S TELEPHONES WENT DEAD. With all communications with the mainland cut off, Isaac went home. He walked to his house, a big frame structure on stilts five blocks from the beach. Despite his anxiety, he planned to ride out the storm at home with his pregnant wife Cora and his three young daughters. He believed the house capable of withstanding any storm the Gulf could deliver. Others apparently felt likewise, for when he arrived, he found 50 storm refugees had taken shelter inside. His brother Joseph soon arrived. He lived in the house and worked for Isaac as an assistant observer. Over the years a rivalry had developed between them. Now Joseph urged everyone to evacuate and head for the center of the city. Isaac, ever confident, insisted his house was the safest place—far safer, certainly, than venturing out into the accelerating winds.

Throughout that Saturday morning, a north wind blowing along the storm's left flank had raised a storm surge along the 30-mile ellipse of Galveston Bay. The surge slowly overflowed the wharf along the north end of the city and began filling the streets

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Verizon | MyVeriz

Verizon Message

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On 10/31/13, James Agras<

This article appeared in yest

Best,
Jim

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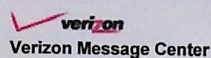
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Friday, Nov 1 at 3:39 PM

From: [redacted]
To: [redacted]
Subject: Re: Fwd: Scanned image from JRA

This is very interesting and a real challenge for ALL faculty.

I have a limited view of the pros and cons. In the sciences, especially with pre-med or pre-dental students, the pressure from STUDENTS was on the FACULTY, to do a good job. They knew the competition they would face in applying to med or dental school; they knew they had to take the medical aptitude test and score well before their applications would even be considered; etc..

I could go on with other factors that were involved in establishing the rigor in the sciences that has not been compromised by any grading system or grade inflation. I think much the same pressures apply to engineering and the trades. Post graduation "Performance" is expected and measurable. A plumber, electrician, welder, etc. can't talk his/her way out of doing a bad job.

When I get to the social sciences, there is so much jargon from the git-go that there is no performance standard clearly articulated or expected. What measurable criteria apply to "Black Studies"; "Communications"; etc. in the employer world?

I have lots of theoretical solutions to the issues raised here but I am past my time!
All I can say is I did what I could, as best I could, when I could!

I suspect you could say the same as you look back in time at your lifes work.
That's why we can exchange thoughts and trust each other as friends and colleagues.

Mike

On 10/31/13, James Agras<[redacted]> wrote:

This article appeared in yesterday's Miami Herald.

Best,
Jim

DEVICE NAME: JRA im3511
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LOCATION:

FILE FORMAT: PDF MMR(G4)
RESOLUTION: 300dpi x 300dpi

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<http://www.adobe.com/>

2013 from Jim Agas on State Board of Education

When Students Rate Teachers, Standards Drop

by Lyell Asher

Suppose that restaurants could evaluate health inspectors, and that an inspector's livelihood depended on what the restaurant thought of the rating it had received. Would the inspector be more or less likely to identify problems at the restaurant? Would incidents of food poisoning go up or down?

No one has been reckless enough to institute such a system in the food-service industry. But a version does exist in American higher education. At the end of every semester, students fill out questionnaires about what they thought of a course. Was the course paced appropriately? Was the professor concerned that the students learn the material? Would you recommend the course to others? What overall rating would you give the professor?

These are reasonable questions, and professors often benefit from what their students say. Professors don't simply inspect. They teach, and it's helpful to know how things might have gone better from the students' point of view. The problem is that, for the vast majority of colleges and universities, student opinion is the only means by

which administrators evaluate teaching. How demanding the course was—how hard it pushed students to develop their minds, expand their imaginations, and refine their understanding of complexity and beauty—is largely invisible to the one mechanism that is supposed to measure quality.

It would be one thing if student evaluations did no harm; then they'd be the equivalent of a thermometer on the fritz—a nuisance, but incapable of making things worse. Evaluations do make things worse, though, by encouraging professors to be less rigorous in grading and less demanding in their requirements. That's because for any given course, easing up on demands and raising grades will get you better reviews at the end.

How much better? It's hard to say. But it isn't as if most teachers are consciously calculating the grade-to-evaluation exchange rate anyway. Lenient grading is always the path of least resistance with or without student reviews: Fewer students show up in your office if you tell them everything is OK, and essays can be graded in half the time if you pretend they're twice as good.

There's also a natural tendency to avoid delivering bad news if you don't

have to. So the prospect of end-of-term student reviews, which are increasingly tied to job security and salary increases, is another current of upward pressure on professors to relax standards.

There is no downward pressure. College administrators have little interest in solving or even acknowledging the

Why do colleges tie academic careers to winning the approval of teenagers? Something is seriously amiss.

problem. They're focused on student retention and graduation rates, both of which they assume might suffer if the college required more of its students.

Meanwhile, studies show that the average undergraduate is down to 12 hours of coursework per week outside the classroom, even as grades continue to rise. One of these studies, "Academically Adrift" (2011) by sociologists Richard Arum and Josipa Roksa, suggests a couple of steps that could help remedy the problem: "high expectations for students and increased academic requirements in

syllabi... coupled with rigorous grading standards that encourage students to spend more time studying."

Colleges can change this culture, in other words, without spending a dime. The first thing they can do is adopt a version of the Hippocratic oath: Stop doing harm. Stop encouraging low standards with student evaluations that largely ignore academic rigor and difficulty. Reward faculty for expecting more of students, for pushing them out of their comfort zone and for requiring them to put academics back at the center of college life.

Accrediting agencies could initiate this reform, but they too would first have to stop doing harm. They would have to acknowledge, for example, that since "learning outcomes" are calculated by professors in the exact same way that grades are, it's a distinction without a difference, save for the uptick in pseudo-technical jargon.

Then the accrediting agencies should insist that colleges take concrete steps to make courses more uniformly demanding across the board, and to decouple faculty wages and job security from student opinion. The latter is an especially critical issue now, given the increase in adjuncts and part-time faculty, whose job security often hangs by the thread of student reviews.

President Obama's plan for higher education, released in August, does not inspire confidence that this or any other issue related to educational quality will become a central concern. On the contrary, his emphasis on degree completion through "accelerated learning opportunities," online courses, credit for "prior learning" and the like is a recipe for making things worse. Pressing colleges to increase graduation rates is every bit as shortsighted as it was to encourage banks to increase mortgage-approval rates.

But if that's what the president wants to do, he can rest assured that colleges and universities have an incentive structure already in place to make it easier for students to get the degree they want, rather than the education they need.

Mr. Asher is an associate professor of English at Lewis and Clark College.

Trump Year On

HOW A PRE 'YOU'

The 25th Amendment
By Jon Meacham

I

HE COULDN'T HAVE PUT it plainly. On April 13, 1965, in a congressional debate over the 25th Amendment to the Constitution dealing with presidential incapacity, the chairman of the Judiciary Committee, Republican Emanuel Celler of New York, with high-minded legal arguments were there, Celler said, to fix what might be done if the deranged American President had nuclear weapons—became a "fruitcake." Celler declared the floor. "He may be utterly in this reason, America needs to be Ratified two years later."

6.13.17
Meeting with GOP Senators, Trump calls the House health care bill "the previously celebrated"—me

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Mr. Asher is an associate professor of
English at Lewis and Clark College.

Trump Year One

HOW TO TELL A PRESIDENT 'YOU'RE FIRED'

The 25th Amendment, a constitutional primer

By Jon Meacham

H

HE COULDN'T HAVE PUT IT MORE
plainly. On April 13, 1965, in the midst of
a congressional debate over the proposed
25th Amendment to the Constitution
dealing with presidential succession and
incapacity, the chairman of the House
Judiciary Committee, Representative
Emanuel Celler of New York, dispensed
with high-minded legal arguments. They
were there, Celler said, to figure out what
might be done if the unthinkable—a
deranged American President with
nuclear weapons—became thinkable.
"The President may be as nutty as a
fruitcake," Celler declared on the House
floor. "He may be utterly insane." And for
this reason, America needed a plan.

Ratified two years later, the amend-

ment offered the country just that. And
now, half a century on, the subject of
whether President Donald Trump could
face a removal from power under its terms
is one of an ever widening conversation.
"The 25th Amendment is a concept that is
alive every day in the White House," said
Michael Wolff, author of *Fire and Fury: Inside the Trump White House*, on NBC's
Meet the Press. White House officials
have strongly denied this—but, as ever,
the President himself has managed to
keep the issue alive by tweeting about
his mental stability.

Is the 25th Amendment chatter simply
a liberal fantasy? A #resistance fever
dream? Political porn for wonks? Almost
certainly, but we live in a world in which
the outlandish (a President Trump)
became a reality, so who's to say where
our political melodrama will end? It's
highly unlikely, but this unprecedented
presidency could lead to unprecedented
constitutional ground: the invocation of
the boring-sounding yet world-shaking
Section 4 of the 25th Amendment—a
provision that enables the Vice President,
with a majority of members of the
Cabinet, to declare the President unable
to discharge his duties, thus installing
the Vice President as acting President
pending a presidential appeal to, and vote
by, the Congress.

6.13.17
Meeting with GOP Senators, Trump
calls the House health care bill—which
he previously celebrated—"mean."



6.29.17
Trump calls *Morning Joe* co-host
Mika Brzezinski "low IQ" and says
he saw her "bleeding badly from a
face-lift."

7.8.17
Trump helps write a misleading state-
ment in which Trump Jr. says a 2016
meeting with a Russian lawyer was
about adoption.

Pg 1

Interesting
Process

Pg 3



surgery ('81); Ford, seated, considers his options for Vice President ('74); Eisenhower is wheeled onto a hospital sundeck after his heart attack ('55)

decision, including particularly the decision to stand aside."

AFTER HIS STROKE EARLY IN HIS SECOND term, Eisenhower drafted an understanding with Vice President Richard Nixon that authorized him to step in for a time if Eisenhower were incapacitated. There was, however, a possibly fatal flaw in Ike's plan: "The President," Eisenhower wrote, "would determine when the inability had ended and at that time would resume the full exercise of the power and duties of the Office."

But what if the incapacity had not, in fact, been overcome? What if the President believed himself to be fit but was not? This was the issue the drafters wrestled with in Section 4. Like Eisenhower's informal plan, Section 3 handled situations like convalescence from physical problems. The questions for Section 4 involved trickier scenarios in which the President suffered, for instance, from some kind of mental-health issue that he might not recognize but others around him did. "I admit this: if a man were so deranged that he thought he was able, and the consensus was that he [wasn't]," Eisenhower said, "there would have to be something else done."

Section 4 of the 25th Amendment was that something else. In such a case, according to the amendment, the Vice President and a majority of the Cabinet, or

Congress's "such other body," could sign a letter to the Speaker of the House (Paul Ryan) and the president pro tempore of the Senate (Orrin Hatch) declaring the President unable to discharge the office. If this happens, the Vice President becomes acting President. If the President in question disagrees about his incapacity, he can, in writing, immediately reassume office. In this constitutional tennis match, the Vice President and the Cabinet majority then have four days to decide whether to reassert the claim of incapacity. If they do so, the Vice President again becomes acting President. Congress then takes up the issue, where a two-thirds vote in each house, within 21 days, would be necessary to sustain the acting President.

If the issue were allegations about a President's mental health—the likeliest scenario—Congress could presumably investigate, impaneling doctors and taking testimony. And there's this wrinkle: "While removal by impeachment is final, the President may appeal a declaration of Section 4 inability an unlimited number of times," Adam R.F. Gustafson wrote in the *Yale Law & Policy Review* in 2009—in Trump terms, thus setting off a seemingly endless season of *The Apprentice* meets *Advise and Consent*.

HISTORY DOESN'T OFFER US MUCH TO go on in terms of Section 4. Although it was in effect during Watergate, those

around Nixon, worried about his darkness and his drinking, took informal steps. "I can go into my office and pick up the telephone and in 25 minutes 70 million people will be dead," Nixon told visiting lawmakers during Watergate. Afterward, California Senator Alan Cranston called Defense Secretary James R. Schlesinger about "the need for keeping a berserk President from plunging us into a holocaust." In Nixon's final days as President, Schlesinger instructed the military to double-check attack orders from the White House with him, thus unilaterally circumscribing the powers of the Commander in Chief.

The 25th Amendment was explicitly researched in 1987 amid speculation that the 76-year-old Reagan, hobbled by the *Iran-contra* affair, might be unable to carry on as President. The incoming White House chief of staff, Howard Baker, asked an aide to explore the constitutional options, but upon arriving for work, Baker realized that the President was up to the job, and talk of the amendment faded.

Which is what will probably happen with the current chatter about Trump. But in the nuclear age, there isn't much room for error—and that means Pence and the Cabinet might want to brush up on their constitutional history, for in the most dangerous of hours it could fall to them to make some of their own. □



7.28.17
Republican Senator John McCain joins Senators Susan Collins and Lisa Murkowski to vote down an Obamacare-repeal bill.



7.31.17
New communications director Anthony Scaramucci is fired after 10 tumultuous days on the job.

8.8.17
Trump says that if North Korean missile tests continue, "they will be met with fire and fury like the world has never seen."



EXECUTIVE EMERGENCIES George H.W. Bush h

We know, we know: it all sounds overheated, particularly when you consider that Vice President Mike Pence is one of Trump's chief enablers and that the Cabinet officers all owe their place to Trump, whom they would be voting to humiliate. And yet the mechanics are in place, and the history of the question of presidential incapacity, and of the amendment itself, shows that lawmakers at midcentury anticipated a President whose instability might amount to disability. So why pass up a teachable moment to explore remote constitutional hypotheticals?

PERSONAL AND ABSTRACT FORCES shaped the debate over the capacity sections of the 25th Amendment. There were memories of Woodrow Wilson's long convalescence from his October 1919 stroke; the evident (if rarely acknowledged in real time) illness and wartime death of Franklin D. Roosevelt; Dwight D. Eisenhower's heart attack in 1955 and stroke in '57; and John F. Kennedy's assassination in 1963. The advent of the Cold War, meanwhile, had sharpened the question of a President's capacity to respond instantly to an existential nuclear crisis.

The 25th Amendment has four sections, three of which have to do with presidential succession and the filling of the vice presidency in the event of a death or resignation. Section 3, under which a President can temporarily trans-



7.11.17
Trump Jr.'s emails reveal he set up a 2016 meeting with a Russian lawyer who promised dirt on Hillary Clinton.



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their constitutional history, for in the
ost dangerous of hours it could fall to
em to make some of their own. □

8.8.17

Trump says that if North Korean
missile tests continue, "they will be
met with fire and fury like the world
has never seen."

Pg. 2



EXECUTIVE EMERGENCIES George H.W. Bush had a thyroid condition ('91); Reagan, shortly before he was shot in an assassination attempt and underwent

We know, we know: it all sounds over-
heated, particularly when you consider
that Vice President Mike Pence is one of
Trump's chief enablers and that the Cab-
inet officers all owe their place to Trump,
whom they would be voting to humiliate.
And yet the mechanics are in place, and
the history of the question of presiden-
tial incapacity, and of the amendment it-
self, shows that lawmakers at midcentury
anticipated a President whose instability
might amount to disability. So why pass
up a teachable moment to explore remote
constitutional hypotheticals?

PERSONAL AND ABSTRACT FORCES
shaped the debate over the capacity sec-
tions of the 25th Amendment. There were
memories of Woodrow Wilson's long con-
valescence from his October 1919 stroke;
the evident (if rarely acknowledged in
real time) illness and wartime death of
Franklin D. Roosevelt; Dwight D. Eisen-
hower's heart attack in 1955 and stroke
in '57; and John F. Kennedy's assassina-
tion in 1963. The advent of the Cold War,
meanwhile, had sharpened the question
of a President's capacity to respond in-
stantly to an existential nuclear crisis.

The 25th Amendment has four sec-
tions, three of which have to do with
presidential succession and the filling
of the vice presidency in the event of a
death or resignation. Section 3, under
which a President can temporarily trans-

fer authority if he, for instance, under-
goes surgery, was invoked by Ronald
Reagan in 1985 and by George W. Bush
in 2002 and '07. George H.W. Bush, who
suffered from a thyroid condition, was
ready to invoke Section 3, giving Vice
President Dan Quayle temporary power
if he was seriously felled by illness, but it
never came to that.

Section 4 is where things really get in-
teresting. That provision, wrote John D.
Feerick, a legal scholar and a key archi-
tect of the amendment, "covers the most
difficult cases of inability—when the
President cannot or refuses to declare
his own inability." The modern framers
contemplated nightmare scenarios as
they drafted the amendment, including,
Feerick recalled, "situations where the
President might be kidnapped or cap-
tured, under an oxygen tent at the time
of enemy attack, or bereft of speech or
sight." One Section 4 scenario: an emer-
gency medical situation during which
the President was unconscious or dis-
abled for a period of time (a coma, for in-
stance). It was clear from the debates at
the time of adoption and ratification, ac-
cording to Feerick, that "unpopularity,
incompetence, impeachable conduct,
poor judgment and laziness do not con-
stitute an 'inability' within the meaning
of the amendment."

The drafters took pains to make clear
that this was not an option to be taken in

ordinary times. "We are not getting into
a position," Indiana Senator Birch Bayh,
the amendment's chief author, said in re-
sponse to questions from Senator Robert
Kennedy of New York, "in which, when a
President makes an unpopular decision,
he would immediately be rendered un-
able to perform the duties of his office."
The position they were getting into was
more apocalyptic. "It is conceivable,"
Bayh said, "that a President might be
able to walk, for example, and thus, by
the definition of some people, might be
physically able, but at the same time he
might not possess the mental capacity to
make a decision and perform the powers
and duties of his office."

The most contentious issue, then,
would be psychological ability, not physi-
cal. And the context would likely be some
kind of standoff in which a President, in
the overwhelming opinion of one elected
official (the Vice President) and of offi-
cials confirmed by the Senate (a major-
ity of the Cabinet), appeared unfit to ex-
ecute his duties. There is also language
in the amendment that allows a majority
of "such other body as Congress may by
law provide"—perhaps a panel of medi-
cal experts (or even Congress itself)—to
weigh in. In 1965, Representative Rich-
ard H. Poff of Virginia said Section 4 was
designed to meet a moment "when the
President, by reason of mental debility,
is unable or unwilling to make any rational

7.13.17

Trump Jr.'s emails reveal he
set up a 2016 meeting with a
Russian lawyer who promised
dirt on Hillary Clinton.



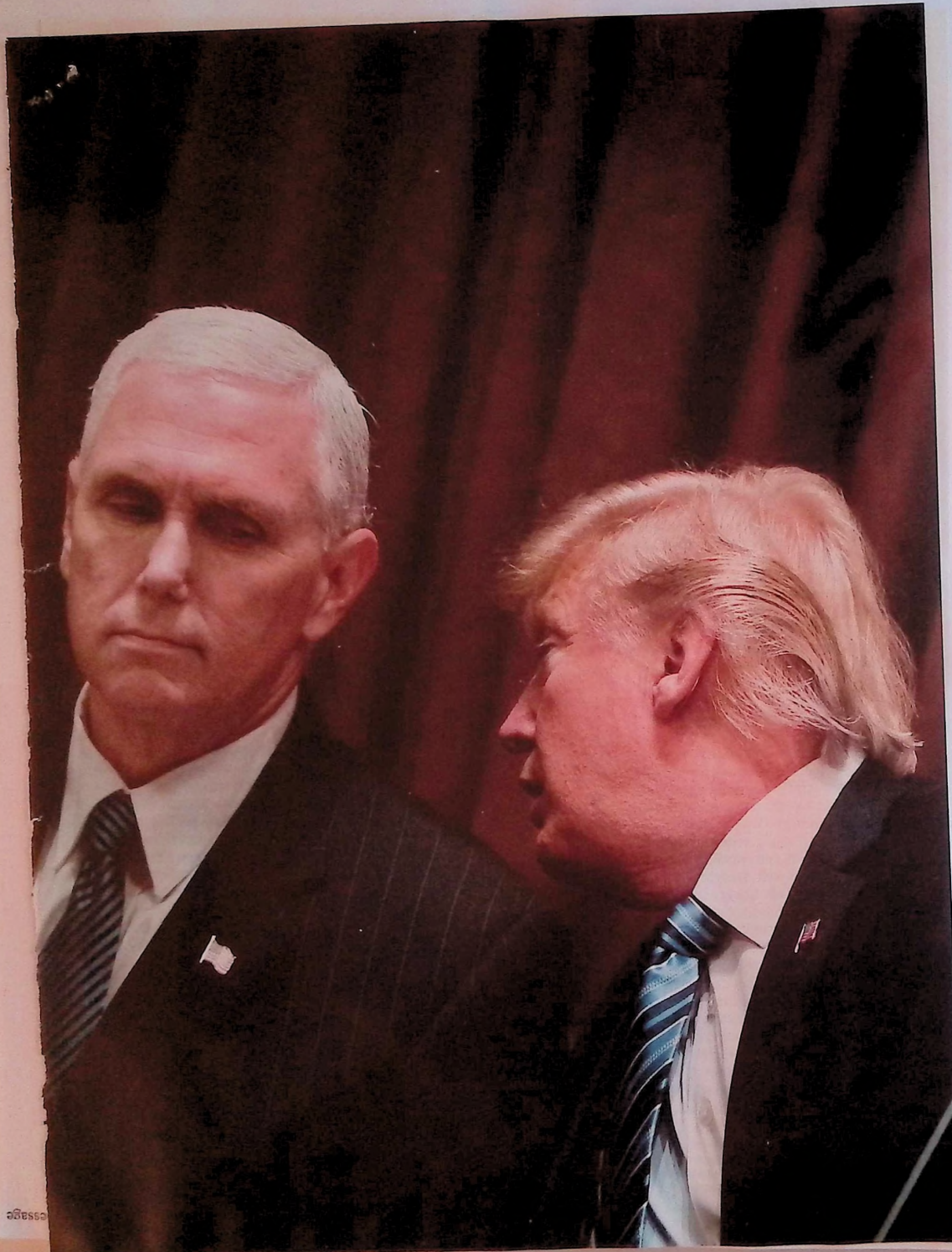
7.13.17

Trump tells French First Lady
Brigitte Macron that she's
"in such good shape" and
"beautiful," spurring criticism.



7.25.17

Speaking to the Boy Scout
Jamboree, Trump breaks protocol
and angers parents by bragging
about his election win.



The Mercer Mile: Legacy of an American

by Kenneth L. Gobble

I don't care how many museums you have visited, you've never seen anything like the Mercer Museum.

For one thing, it's an honest-to-goodness castle, a seven story concrete structure complete with turrets and parapets, that looms over the surrounding modest homes in a residential section of Doylestown, Pennsylvania. Its designer and builder, Henry Chapman Mercer, was inspired by visits to medieval castles in Europe to construct a building to house his collection of thousands of historical artifacts. As Mercer liked to say of his castle, "it was made for the collection . . . the collection was not made for it."

As proof of this boast, he literally built the walls around such things as a cider press, a whaleboat, and a horse-drawn fire engine. A number of these large objects cannot be removed from the building simply because the doorways were built after the artifacts were in place.

Who was Henry Chapman Mercer? And what prompted him to leave this legacy of his passion for architecture and archaeology?

To call him "eccentric" is to concur with popular opinion in his own day. A life-long resident of Doylestown, Mercer graduated from Harvard in 1879 with prospects of a legal career. But the wealth of a dotting aunt allowed him instead to pursue his primary interest—archaeology. Elizabeth Lawrence, widow of a Boston diplomat, funded Mercer's travels and digs.

The turning point in Mercer's career came one day in 1897 when he visited the barn of a junk dealer in search of fireplace tools. Looking around him at objects discarded in favor of power machinery and other technological advances, he realized that here lay the very things that archaeologists of the future would hope to find. He began to collect the tools and instruments of farmers, merchants, and tradesmen. His search led him to old houses, barns, and cellars where artifacts of the 18th and 19th century lay abandoned. He bought untold numbers of "penny lots" at local auctions.

To his neighbors in Doylestown, Mercer was something of a crackpot,



Fonhill, the home of Henry Mercer.

especially when his collection of "junk" began overflowing things on his own property and way into garages and barns town. He called his assembly of objects, "The Tools of the Maker." He numbered each the time the museum opened the total had reached 15,000.

But the museum was not castle Mercer built. That home stands one mile north of Doylestown. Using concrete, a fire-proof material used then to construct factories, Mercer erected his forty room, twelve bath mansion over and around a small stone house built in 1742. When you enter Fonhill, you can detect the old house in its shuttered window original door.

The outstanding feature of Fonhill is the rich variety of tiles Mercer collected throughout the mansion. His interest in tile-making began when he was looking for items to add to his collection of tools. Fascinated by the pottery-making of the Pennsylvania Germans, he tried his own hand at craft and eventually developed a method for producing decorative tiles. His tile designs were inspired by his studies and travels. In the first quarter of the century, Mercer's tiles were stashed in such buildings as the Boro Hotel in Atlantic City, the library of Bryn Mawr College, and the Lyceum Theater in Hollywood. Mercer depicted the history of Pennsylvania

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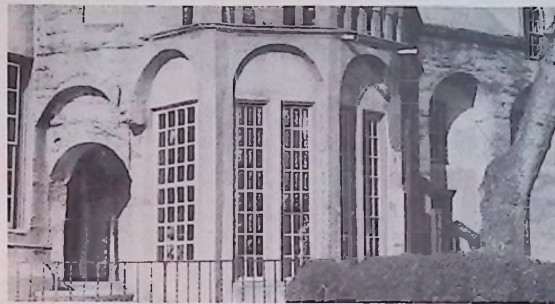
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especially when his collection of "junk" began overflowing the buildings on his own property and found its way into garages and barns around town. He called his assemblage of objects, "The Tools of the Nation Maker." He numbered each item; by the time the museum opened in 1916, the total had reached 15,000.

But the museum was not the first castle Mercer built. That honor belongs to Fonhill, his dream house, which stands one mile north of Doylestown. Using concrete, a pliable and fire-proof material used then mostly to construct factories, Mercer erected his forty room, twelve bath mansion over and around a small stone farmhouse built in 1742. When you visit Fonhill, you can detect the old farmhouse in its shuttered windows and original door.

The outstanding feature of Fonhill is the rich variety of tiles Mercer installed throughout the mansion. His interest in tile-making began as he was looking for items to add to his collection of tools. Fascinated by the pottery-making of the Pennsylvania Germans, he tried his own hand at the craft and eventually developed a method for producing decorative tiles. His tile designs were inspired by his studies and travels. In the first quarter of the century, Mercer's tiles were installed in such buildings as the Marlboro Hotel in Atlantic City, the library of Bryn Mawr College, and the Chinese Theater in Hollywood. Mercer depicted the history of Pennsylvania

in a four hundred tile mosaic on the floor of the state capitol building in Harrisburg.

At Fonhill, Mercer's interest in the history of tile-making is on display, including Babylonian clay tablets, Chinese pottery, and wall tiles from Europe. His own colorful tiles are much in evidence, particularly in the library, the Columbus Room (which depicts the discovery of America), and even the stairways.

Guided tours of Fonhill are available seven days a week. Admission charges are \$4.00 for adults, \$3.50 for seniors, and \$1.50 for students.

On the property adjoining Fonhill stands the Moravian Pottery and Tile Works. It was under construction from 1910 to 1912 and was designed to replicate the Spanish mission churches of California. For forty years until the business closed down, this cloister-like building produced decorative tiles made from the red clay of the region.

A visit to the Tile Works consists of a self-guided tour. Ceramists use the same hand processes employed by Mercer's workers. Clay slabs are rolled out and cut to form quarry tiles or mosaics. Others are pressed into copies of Mercer's original molds to form decorative tiles. The tiles are fired and glazed on the premises.

The Tile Works is open daily from 10 a.m. to 5 p.m. The cost of the self-guided tour is \$2.00 for adults, \$1.50 for seniors, and \$1.00 for students.

It was only after he had finished

building Fonhill and the Tile Works that Henry Mercer turned his attention to the museum. Construction began in 1914; Mercer himself supervised the work of seven day laborers and Lucy the horse. The draft animal pulled the ropes attached to a pulley that was used to hoist the cement. Even the window frames were made of concrete and the windows were placed so as to enhance natural lighting.

When you visit the museum, it's best to take the elevator to the top floor and work your way down. Tiers of galleries wrap themselves around a central court. On each level, you will find glass-enclosed cubicles, each containing tools of more than sixty specific crafts or trades, such as

shoe-making, blacksmithing, baking, weaving, clockmaking, and stone-cutting.

The sheer number of items on display is staggering. Mercer was not content to obtain just one example of each tool such as a saw or a cookie cutter. He believed that each tool, because it was handmade, had its unique design. He expanded his definition of "tool" to include items used by governments, such as ballot boxes and the last gallows used in Bucks County.

What I found most fascinating, in addition to the comprehensive nature of Mercer's collection, was the unusual method of display for many of the larger items. Hanging from the balconies and ceilings are cradles, boats,

sleds, and horse-drawn vehicles. This arrangement makes for a unique perspective. Standing on the ground floor, for example, I got a "whale's view" of the boat used by harpooners of a bygone era.

The museum is closed to visitors on Sunday and Monday. Tours are self-guided, but a guide-sheet to the location of the artifacts is available as part of the admission price: adults—\$4.00, seniors—\$3.50, students—\$1.50.

There can be no doubt that Henry Chapman Mercer was eccentric. Whether he was a genius or a crackpot is open to debate. Make your own decision after you visit his legacy, the three buildings that comprise "the Mercer Mile."

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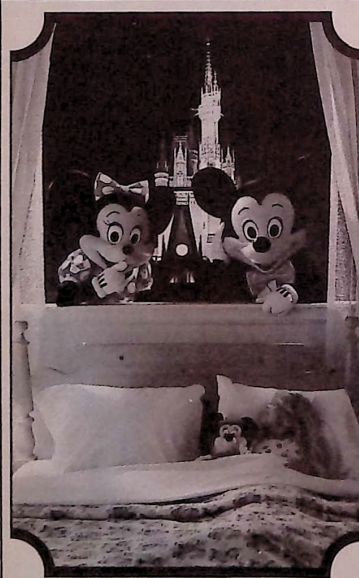
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THE LEGACY OF ABANDONED MI

WHY A PA. WA ORANG



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THE LEGACY OF ABANDONED MINES

WHY ARE SOME PA. WATERWAYS ORANGE?



Robert Hughes, executive director for the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation, watches as acid mine drainage flows from boreholes in Hanover Township in Luzerne County. The drainage is water that is tainted with high levels of iron that turns it orange and gives off a sulfur odor that smells like rotten eggs. Joe Herrmitt, PennLive

Nick Malawskey For PennLive

Two miles from where it empties into the Susquehanna River, Solomon Creek is met by an unnamed tributary. In any other town this would be an unremarkable joining of two small water bodies, of interest to few except for a local fisherman or two.

But you do not want to fish at the confluence of these two small streams or wade into the waters.

The tributary does not roll off of a hillside or trickle out of a pond. Instead it comes rushing out of the ground at more than 10,000 gallons-per-minute from a series of holes in the stream bed.

It is a massive upwelling of water and one which has stained the creek bed, rocks, plants and everything it touches orange.

It's not the dark orange of a clay soil runoff, but the bright orange of a PennDOT highway cone.

Here in a stand of trees not far from the Susquehanna is a surreal, almost lurid scene — the very unnaturalness of which is almost an assault upon the senses (you can smell the up-welling before you see it). Yet it is one that is all too common in the former coal fields of northeastern Pennsylvania.

Two-hundred and fifty feet below sits a massive abandoned mining complex — one of hundreds abandoned when the anthracite industry collapsed in the middle of the 20th century.

The water surging up from the abandoned mine is packed with iron-oxide, essentially rust which has leached out of iron deposits underground, giving the stream its orange color.

Abandoned mine drainage — and its impacts on streams and rivers — can be seen across northeastern Pennsylvania. Portions of the Susquehanna River and Lackawanna River are stained orange due to mine drainage. But it's not a uniquely NEPA issue.

Across Pennsylvania (and any state with extensive coal mining), old abandoned mines leaching water into the environment is a major issue.

To a large degree, water caused the mining industry's collapse. Mines had to be pumped constantly in order for coal to be extracted. As the mines failed, the pumps which kept them dry were turned off.

That led to subterranean flooding — billions of gallons of water stored in former mines which now act as huge underground reservoirs that stretch for miles under Wilkes-Barre, Scranton and the rest of the northern coalfields.

SEE ORANGE, A12



Acid mine drainage flows through the Askam Oxidation treatment center on Nanticoke Creek.

It took Pennsylvania almost 150 years to create the environmental mess that is flowing up from the abandoned mine fields and into our creeks, streams and rivers. Given the limits on time and money, it may take another 150 years to clean it up.

To save coal mines, officials considered 137-mile tunnel. Page A11

Why are some Pa. waterways orange?

FROM A1

As the mines reached capacity, the water began to overflow through any opening it could find. In basements, sewer systems, old mine shafts, any opening at all — mine water began spewing out of the ground.

The underground fires at Centralia might be the more well-known consequences of mining. But the underground pools and their upwellings are the true legacy of anthracite mining in Pennsylvania.

SIGNS OF PROGRESS

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SIGNS OF PROGRESS

When matters came to a head following Tropical Storm Agnes in 1972, state regulators were left with thousands of upwellings and no easy answers. To relieve the pressure, they drilled boreholes — like the ones in South Wilkes-Barre — hundreds of feet down to the abandoned mines.

It was an ugly, almost impossible decision. Officials sought to balance the needs of communities against environmental damage, and concentrated, rather than dispersed, the abandoned mine discharges, which left unchecked could have destroyed the valley. The state also levied a tax on coal extraction, money which was then dedicated to abandoned mine reclamation and environmental programs.

In the decades since, there have been successes. A few miles outside of Wilkes-Barre is a sprawling logistics center with warehouses for large retailers. Employing hundreds of local residents, it was built on a reclaimed mine.

At the nearby Askam Borehole, a passive treatment system treats water running off from two nearby boreholes. It essentially impounds the water and causes the iron-oxide to settle before discharging into a nearby creek.

Experts who work in the field say that after years of chipping away at projects, the tide is turning.

"I think we're at the precipice of seeing some major reductions of mine drainage impacts," said Tom Clark, an environmental scientist with the Susquehanna River Basin Commission who focuses on abandoned mine drainage issues.

Clark credits advances in the field and targeted investment by the state Department of



The site of the Blue Coal Corp.'s Hueer Colliery is the home of the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation. Portions of the area have been converted to public space. Joe Herrmitt, PennLive

tree-lined, into the surrounding hills.

It could be a beautiful recreation area, were it not filled with millions of gallons of bright orange water, discharged from the mine beneath it.

"There were probably about 1,500 people working at this colliery years ago, many years ago. Then, when they left it, it filled up," said Robert Hughes, the executive director of the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation. "It's been here for 50, 60 years, and we know from topographical maps it's about 80 feet deep."

for its maintenance needs. Hughes said there was a proposal to install a dam at one end of the reservoir to generate electricity (and pay for mitigation). But again, the lake's remote location made that unfeasible.

In short, the lake is something of a mine-drainage Catch-22. It is preventing polluted water from spilling into the nearby community but it is a vast polluted body of water that is essentially devoid of life.

There are ways in which the water-filled mines are a blessing. The waters keep the mines intact and prevent them from collapsing

said Clark with the SRBC.

"In the anthracite fields ... it's the scale of the issues. It's at such a scale that it makes it difficult," he said.

There are more than 200 identified discharges along the Susquehanna River and its major tributaries in Pennsylvania.

In between Wilkes-Barre and Scranton is the Old Forge Borehole, one of the oldest and largest mine discharges in the state, if not the nation. It discharges 40 million gallons per day, discoloring an entire stretch of the Lackawanna River. It can clearly be seen

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Clark credits advances in the field and targeted investment by the state Department of Environmental Protection and the application of federal grants. Still, mitigating mine drainage is a relatively new science, one learned through trial and error.

Massive, expensive challenges

The problems left by the coal industry's demise are almost unimaginatively vast — especially in northeastern Pennsylvania.

A few miles south of Wilkes-Barre is the town of Nanticoke. Down a gravel road named Cemetery Road lies a 20-acre reservoir. From a nearby overlook it stretches,



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The lake — called "Red Lake" or "Newport Lake" by the locals — is a good example of the challenges in mitigating mine runoff.

Because of its sheer size, Hughes' organization estimated it would cost more than \$1 million to treat the water in the lake. But it is remote enough to make doing so a low priority for state or federal funding, compared to other environmental issues in the area.

Putting in an active water treatment plant just to treat the pollution is unfeasible because there would be no rate-payers to pay

for its maintenance needs. Hughes said there was a proposal to install a dam at one end of the reservoir to generate electricity (and pay for mitigation). But again, the lake's remote location made that unfeasible.

In short, the lake is something of a mine-drainage Catch-22. It is preventing polluted water from spilling into the nearby community but it is a vast polluted body of water that is essentially devoid of life.

There are ways in which the water-filled mines are a blessing. The waters keep the mines intact and prevent them from collapsing under the communities in the valley.

This is the challenge at the core of mine drainage issues, one that largely plays out beyond the public's view.

"They're hidden. They're hidden because they've become overgrown, because no one wants to look at them. They stay hidden for a reason," Hughes said. "People don't understand how much drainage there is under their feet and how vast the mine pools are."

The sheer size of many of the runoffs makes it difficult to address the problem,

said Clark with the SRBC.

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In 2015, the Gold King Mine in Colorado captured national attention when contractors accidentally unleashed water held in the mine, spilling three million gallons of mine runoff into the Animas River.

In Wilkes-Barre, Hughes said, "We call that 'Tuesday.'"

"The sad part is, it's 20-20," he said. "We should have the vision to clean up the coal fields where people are suffering."

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To save coal mines, officials devised a preposterous plan: Build a 137-mile tunnel

Nick Malawskey For PennLive

For more than a century, the anthracite mines of Pennsylvania fed the furnaces of a nation. It boiled the steam in the locomotives that transported tons of coal to Harrisburg and Philadelphia, where it fueled the industries that built America and warmed the homes of workers at night.

It was, and remains, perhaps the largest anthracite coal deposit in the world — some 480 square miles of coal-bearing rock, which ran from northern Dauphin County through the valleys past Pottsville, north to Hazleton and beyond to Wilkes-Barre and Scranton.

In the mountains along the Susquehanna River valley, hard men dug deep for hard coal. At its peak in 1917, more than 100 million tons of coal were extricated from the hills and valleys by more than 130,000 men employed by a web of mine shafts, tunnels and bores that honeycombed the region.

As they chased the veins ever deeper, the mines sowed the seeds of their own destruction. It was not labor unrest which closed the mines or oil or gas, although these all would play their part. What doomed the anthracite mines of Pennsylvania — and a way of life for generations — was water.

A drop of water will always seek the path of least resistance toward the lowest point it can reach. In the ridge and valley system of the anthracite fields, those lowest points were often underground, deep under the valley floor.

Entire streams were lost to seepage, disappearing as they ran off of the mountain's flanks, flowing into any opening in the mines. The deeper miners dug, the more water seeped into the mines.

To reach the coal, the water had to be pumped out. Federal reports show the ever-increasing load; in 1920 it was estimated that for each ton of coal mined, eight tons of water had to be pumped out. By 1950, it was 27 tons of water per each ton of coal.

As coal faced increasing pressure from oil and gas, the costs of pumping began to outweigh the price of coal for many mines.

By the early 1950s, anywhere from one-third to two-thirds of the mines were abandoned. From 1950 to 1955, the number employed in the region's mines fell nearly in half, from 75,231 to 37,397. Vast subterranean pools were formed in the abandoned mine workings.

As the industry declined precipitously, the federal Bureau of Mines, led in part by the son of a coal miner, put forth an audacious — perhaps implausible by today's standards — plan to save the coal industry.

If the mines were filling with water, then the answer was simple: Drain the water.

The plan to do so: Dig a gravity-fed 137-plus-mile-long tunnel roughly 1,500 feet below the coal fields north of Scranton, down the Wyoming Valley to the lower deposits around Mahanoy City and Pottsville.

From there it would bore through five mountain ranges south to the rolling farmland of Lancaster County and, eventually, the mouth of the Susquehanna River. Individual coal mines could then connect to the tunnel bringing the entire length, planners esti-



A scene from the anthracite mines under Pittston. By the mid-20th century, the mining industry in Pennsylvania was in sharp decline. A massive tunnel project was proposed to try to save the industry, but it never materialized. Library of Congress

When the concept was introduced in 1950, a federal expert estimated it would cost between \$300 million and \$500 million to complete (or \$3.1 billion to \$5.1 billion today after inflation). They told The New York Times the huge cost would be offset by allowing the mining industry to access another 10 billion tons of coal.

mated, close to 200 miles.

The 71-mile-long main line would be 16-feet in diameter, would drop about 1 foot per linear mile, even through the heart of the Sharp Mountain, Blue Mountain and Second Mountain ridges, and have a capacity to drain — and discharge into the river — nearly 400,000 gallons-per-minute.

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It would be an extraordinary — even heroic — feat of mining and engineering. But at that time, in the hills of the Wyoming Valley, there were no better miners or engineers on earth.

As preposterous as the plan may sound today, it was taken very seriously in the early 1950s, when the fear of the industry's collapse was a daily concern for an entire region of the state.

The plan's chief architect, Simon H. Ash, then chief of the federal Bureau of Mines safety division, knew what was at stake. A child of a coal mining family, he had grown up in the coal fields near Roslyn, Washington, and studied at Lehigh University before beginning a career in the industry.

"The whole economy of the northeastern

section of the United States depends, to a large extent, on the mining of Pennsylvania anthracite, which is shipped to New Jersey, New York and New England and is a principal source of energy and heat for that entire region," he wrote as part of a 1953 federal study examining water issues in the mines.

Ash and his cohorts estimated that the tunnel could advance at a pace of 30-feet per day. The project was expected to take a decade to complete.

Where possible or necessary, it would make use of existing or abandoned underground mining tunnels, although much of the construction would take place through virgin earth.

It would require a massive buy-in from the mining industry, the state's government and the townships and counties along the tunnel's route. The tunnel would require access roads, access shafts, pumping plants and surface excavation.

The majority of the price tag for the project would be carried by the federal government, with the additional support of the state and mining industry.

Of course, discharging a vast amount of mine drainage into the Susquehanna River — and subsequently, the Chesapeake Bay — could potentially have adverse environmental affects. Federal researchers felt that the acidity of the mine water would be quickly diluted by the river (and communities that use river

water for drinking purposes would probably have to rethink that plan). Researchers felt that any negative environmental impacts could be mitigated.

They also suggested that if the environmental impacts on the bay proved to be too severe, the plan could be altered to reroute the mine drainage into the Atlantic Ocean via the Delaware River near Marcus Hook, a town with a long industrial heritage.

The federal government spent four years studying the proposal and drilled numerous test bores along the proposed route.

Then Pennsylvania Gov. John Fine formed a special committee to review the federal program and make a recommendation as to whether or not it should proceed. After months of review, the commission recommended that the tunnel be shelved, instead urging that the state invest in a jobs program for the coal region.

Among their many concerns with the federal tunnel plan was the estimated decade to complete the project. "The anthracite industry is presently suffering the most severe and serious economic depression in its history and therefore, in its present condition or in the foreseeable future could not participate financially in the construction of the necessary tributary tunnels feeding to the tunnel project."

In other words, the coal industry was out of time. Despite its audacity, the Conowingo Tunnel project was simply too late to save it.



Acid mine discharge flows through a Maelstrom Oxidizer at the Askam Oxidation treatment center on Nanticoke Creek. The water surging up from abandoned mines is packed with iron-oxide, which is essentially rust.



Don't be fooled. That orange hue isn't from clay, it's from mine discharge. There are more than 200 identified discharges along the Susquehanna River and its major tributaries in Pennsylvania. Photos by Joe Herrmitt, PennLive



Cattails are used to help treat acid mine drainage at the Askam Oxidation treatment center. Part of the issue when it comes to cleanup is the magnitude of the problem and maintenance costs. Given the limits on time and money, it may take another 150 years to clean up.

LIMITED RESOURCES

Hughes, Clark and others involved in mine reclamation agree that the boreholes — as challenging and damaging as they are — are the best option when it comes to mine drainage: Better a few big holes than a thousand little ones.

It's not a lack of will or lack of good intentions that prevents the state or regional organizations from tackling the problem. It's the sheer scale of it and the limited amounts of money there are to tackle the problems.

It also isn't a question of best practices, or even implementing those, said Clark with the SRBC.

"I think we're getting better and better at our craft," he said. "We've learned so much. ... I think we have techniques now that are sounder and better."

The challenge, he said, is providing for the maintenance of the pollution mitigation infrastructure.

As Clark at the SRBC said, "It's not the capital construction costs to build a plant, it's 'How do you maintain it year-after-year?'"

Hughes thinks the solution will only be found if there is an economic argument to

treating mine drainage, envisioning a holy grail of environmental research and public policy that would make treating the water profitable.

"We gotta flip the script and turn the mine water into a resource," he said.

Driving around the abandoned mine fields, he spitballs hydroelectric power, rare mineral collection, geothermal applications — even recreational uses — for the mine drainage.

"That's the challenge," he said. "How do we make it a resource? How do we make it attractive for private entities to invest in it?"

It took Pennsylvania almost 150 years to create the environmental mess that is flowing up from the abandoned mine fields and into our creeks, streams and rivers.

Given the limits on time and money, it may take another 150 years to clean it up.

Many of the men and women working in the mine reclamation field are the sons or daughters of coal miners.

As one expert said, "My father and grandfather helped create this mess — I sorta figure if I help clean it up, maybe I can help balance that scale ... maybe I can help them get into Heaven."

"They're hidden. They're hidden because they've become overgrown, because no one wants to look at them. They stay hidden for a reason. People don't understand how much drainage there is under their feet and how vast the mine pools are."

Robert Hughes, executive director for the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation

