

The logo of the Panama Canal Pilots Association is a circular emblem. It features a central globe with a yellow laurel wreath encircling it. The words "PANAMA CANAL PILOTS ASSOCIATION" are written around the perimeter of the circle. The background of the slide is a faded image of the Panamanian flag, with its characteristic white, blue, and red horizontal stripes.

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# Pilots Training Program in the Panama Canal

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CAPT. ALVARO MORENO CONSTANTINO  
25TH IMPA CONGRESS  
MAY 2022  
CANCÚN, MÉXICO

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# Panama Canal to open in 1914 Pilots Needed!

Add in the August 28, 1913 edition of The New York Times

- Col. George Goethals (Chief Engineer)
  - All vessels passing through the Canal would take a Canal/Government pilot
  - 60 pilots would be needed to sustain operations
  - Still unclear where would those pilots come from
  - Pilots would have control of vessels in times of war (World War I started in 1914)

WASHINGTON, Aug. 28.—Col. George Goethals, Chief Engineer of the Panama Canal, has recommended to the Secretary of War, as one of the fundamental regulations for the operation of the canal, that all vessels passing through the waterway shall be required to accept the services of an engineer-pilot provided by the canal authorities. This is to be done as a precautionary measure to avoid injury to the locks and their intricate and costly machinery by any accident through a misunderstanding of signals.

It has been estimated that sixty pilots will be required for the work, supposing that the capacity of the canal amounts to forty "lockages" a day. Every vessel desiring to pass through the canal will tie up at the approach piers at either terminal and pilots, furnished by the canal organization, will take charge at that point and retain control through the canal and into the ocean at the opposite terminal. The engines will be stopped entirely when the vessel goes into a lock and the pilot will keep an assistant in the engine room to see that none of the machinery is turned over.

This arrangement is similar to that employed at the Suez Canal and also at several other important canals. Congress will be asked to provide legislation to meet the demands of underwriters for some protection in case an injury occurs to a vessel when thus in the control of the canal pilots.

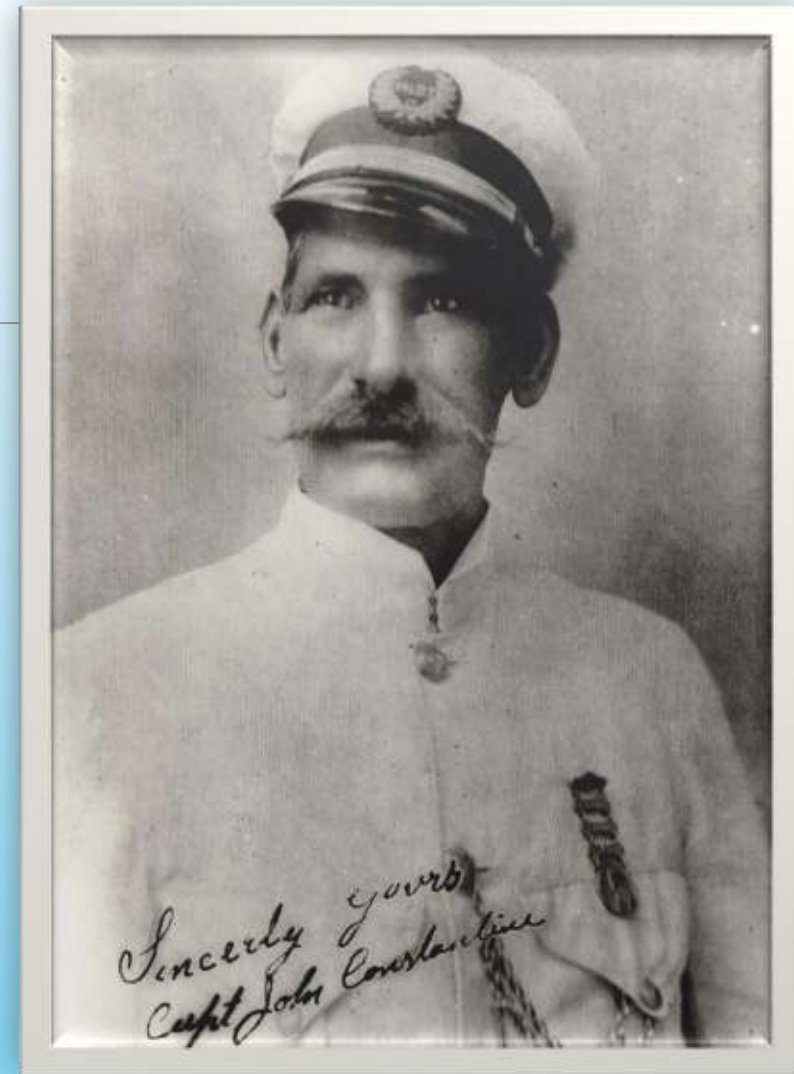
It is certain that in time of war such a regulation for entire control by Government pilots would be necessary, and Col. Goethals takes the position that it is wise to begin in time of peace and maintain the arrangement uniformly so that there would be no apparent hardship in the plan in time of war. It is recognized that there might be danger in time of war from an engineer of an unfriendly country disobeying signals and smashing into a lock and inflicting great injury to it.

# Capt. John Constantine

## First Panama Canal Pilot

- Sailed as seaman and boatswain with the Pacific Mail Steamship Company (came up through the hawse-pipe)
- Worked as dredge Master with the Compagnie Universelle du Canal Interoceanique de Panama
- Isthmian Canal Commission as tug Master
- Panama Railroad Company as Captain and Pilot
- The Panama Canal as pilot
- Pilot of the M/V Ancon in the inaugural transit on August 15, 1914
- How much formal pilot training did he have?... Unknown...

“Son, if you're in a big hurry to get this vessel alongside then, I would advise you to go very slow”



# Where did Panama Canal pilots come from?

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- Mostly were retired U.S. Navy Officers or Ship Masters, and Captains of Canal floating equipment (tugboats and dredges)

From an article published in The Panama Canal Review, the official publication of the Panama Canal Company (February 1958 edition):

- Before a Panama Canal pilot may make unrestricted transits:
  - He has accompanied a fully-qualified pilot on scores of transits and handled, on his own, smaller vessels
  - Has studied pamphlets, charts, and rules of navigation, and taken examinations to prove his knowledge
  - Has spent some time on a towboat, learning the Canal harbors and its docks and piers
  - If he shows to be qualified, he becomes a **pilot-in-training**
  - He then learns how the Locks operate, what the marine traffic controllers do
  - He watches harbor pilots at work and accompanies other pilots on at least 66 trips through the Canal
  - After six months he becomes a **probationary pilot**, a post in which he remains for another year. Limited at first to ships 385 feet long. This is gradually increased until at the end of 12 months he is taking 525-foot ships

This went on for many many years...

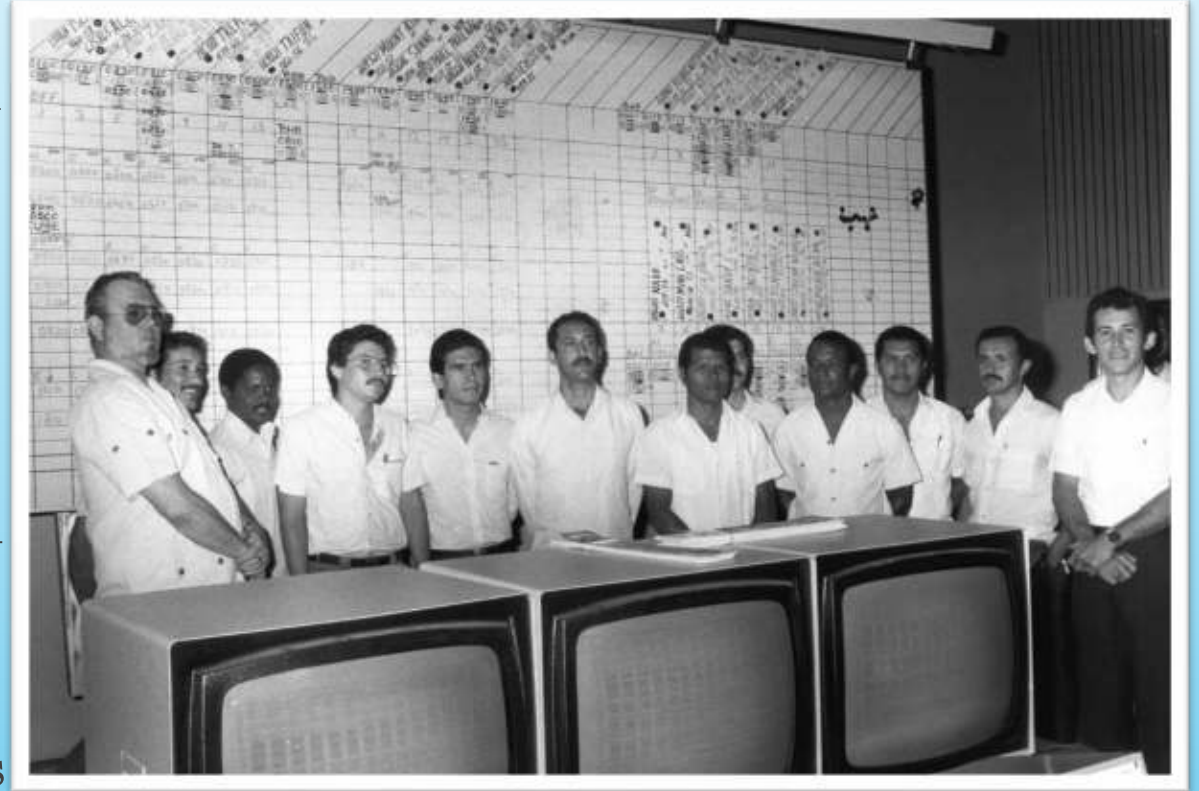
# Panama Canal Treaty of 1977 (implemented in 1979)

- The Treaty changed everything!
- Required increased hiring of Panamanian pilots before turning over the Canal to Panama in 1999
- First two Panamanian pilots had already been hired in 1973
  - Jeremías De León
  - Harmodio Herrera
- The Canal needed to train about 200 Panamanian pilots in 20 years (the traditional source of pilots was not the best to accomplish this)



# The Pilot Understudy Program (PUP)

- Minimum requirement for the position: graduated from a Maritime Academy and having served a minimum of 2 years as a deck officer on vessels over 1,600 GRT (young Officers)
- First group of PUPs, a total of 9, started their training on July 11, 1983
- They graduated from the PUP, and became pilots in training (PIT), on March 15, 1985
- This, along with Canal towboat Masters and PITs, has been the main source of Panama Canal pilots for the last 40 years



# The PUP Program

## (3 years)

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- Participate in a Mentor Program, whereby each trainee is permanently **assigned to a senior pilot** for a two or four week period, accompanying him/her in all his harbor and transit assignments;
- Participate in a **computer course** designed to teach the trainees the basic principles of computers and improve his/her document processing skills;
- Participate in a Technical Resources workshop emphasizing the history of the Panama Canal;
- Participate in a Locks Division orientation program;
- Observe Dredging Division operations; stand watches aboard the various pieces of floating equipment.
- Observe operations on tugboats and launches;

# The PUP Program

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- Stand a minimum of **20 watches on board Canal tugs** both at the Pacific and Atlantic terminals;
- Participate in an Admeasurement Section orientation and training course;
- Participate in a firefighting orientation and training course;
- Assist in day-to-day activities performed by Canal Port Captains during at least a four-week period;
- Participate in an orientation and training program administered by traffic management personnel (VTS);
- Participate in a Survey's Unit orientation and training program;
- Participate in seminars/workshops at the Human Resource Training Center. These courses should pertain to the effective development of the trainee's communication and interpersonal skills, command presence and leadership skills, essential for the adequate development of a Panama Canal Pilot;
- Trainees must periodically be assigned to training sessions at the shiphandling **simulators**.



# The PUP Program



Tabla 17-4

NIVEL DEL PRÁCTICO EN ADIESTRAMIENTO/ ESCALÓN DEL PRÁCTICO	REQUISITO DEL TIEMPO TOTAL EN EL GRADO Y ESCALÓN (EN SEMANAS)	TÍTULO DEL PUESTO	REQUISITO DE TIEMPO TOTAL PARA EL PRÓXIMO GRADO Y ESCALÓN (EN SEMANAS)	MÍNIMO DE TRÁNSITOS REQUERIDOS	COMENTARIOS		
FE-5/7/11	88-156	PRÁCTICO EN PREPARACIÓN	Dividido en 3 niveles	70	Licencia de Asesor de Tránsito expedida por la Junta de Inspectores para embarcaciones de menos de 65'	Viaje de observación y Viajes de prueba	Min. 1.8 años Máx.3 años

# The Pilot-In-Training (PIT) Program (34 weeks)

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PUPs who have been promoted to PIT, Canal Tugboat Captains with a minimum of 2 years of experience and Officers who have sailed no less than 3 years on vessels over 1,600 GRT (1 of those must be as a First Mate)

- ORIENTATION WEEK
- SUBJECT/COURSE
  - LOCAL KNOWLEDGE
  - SAFE BOARDING
  - LIFEVEST (PFD) INSTRUCTION
  - BRM = MASTER PILOT RELATIONSHIP
  - BRIDGE COMMAND PROCEDURES
  - NORTHBOUND & SOUTHBOUND TRANSIT
  - PILOT WORK RULES & TIME KEEPING
  - EVTMS/PPU
  - SIMULATION FAMILIARIZATION

# The PIT Program

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## SEMINAR # 1

- **SUBJECT/COURSE**
  - WORKING WITH TEAMS/GROUPS
  - LEADERSHIP/COMMAND PRESENCE
  - EFFECTIVE COMMUNICATION
  - DECISION MAKING
  - SITUATIONAL AWARENESS
  - RADIO COMMUNICATION

## SEMINAR #2

- **SUBJECT/COURSE**
  - IALA-AIDS TO NAVIGATION IN THE PANAMA CANAL
  - TURNING & TAKING THE WAY OFF
  - SHIP'S HYDRODYNAMICS
  - RUDDER & PROPELLERS
  - COLREGS & PANAMA CANAL RULES
  - LOCKS & LOCOMOTIVES
  - SIMULATION EXERCISE CRITERIA

# The PIT Program

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## SEMINAR # 3

- **SUBJECT/COURSE**
  - PILOTING (TIMING)
  - **PANAMA CANAL OPERATING PROCEDURES**
  - DOCKING & UNDOCKING
  - INVESTIGATION/ACCIDENT (BOARD OF INSPECTORS)
  - FATIGUE (STRESS, SLEEP & HEALTH BALANCE)
  - EMERGENCY RESPONSE
  - SIMULATION CRITERIA

## SEMINAR # 4

- **SUBJECT/COURSE**
  - USE OF ANCHOR
  - USE OF TUG
  - USE OF RADAR (REFRESHMENT COURSE)
  - WEATHER & TIDES
  - STABILITY
  - WRITING ACCURATE REPORTS
  - SIMULATOR EXERCISE

# The PIT Program

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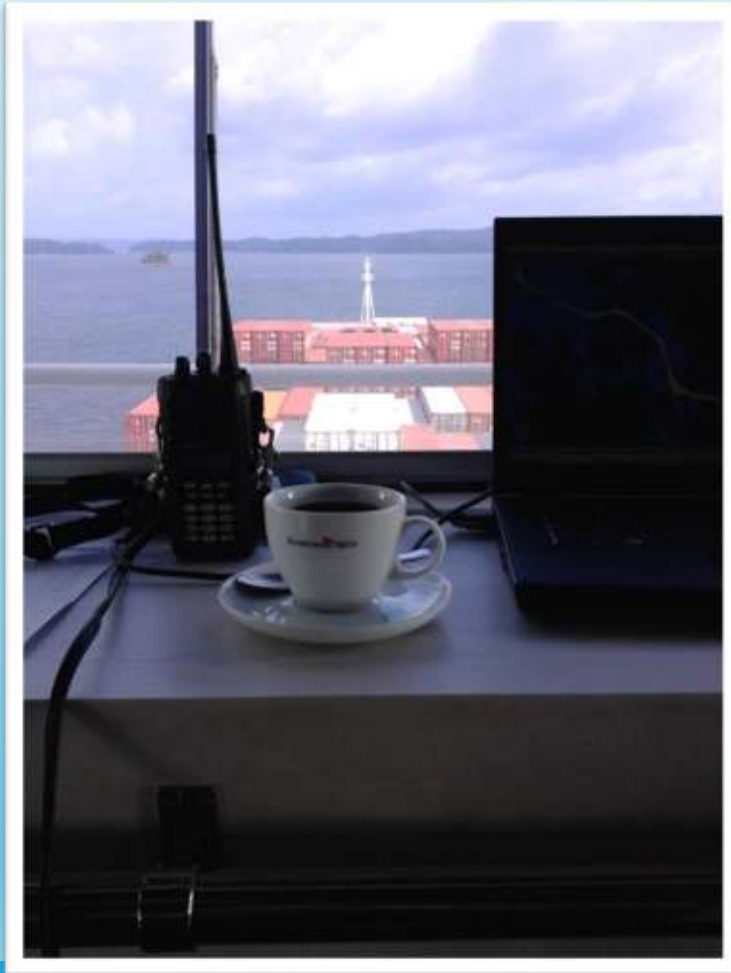
## SEMINAR #5

- SUBJECT/COURSE
  - GLOSSARY OF SHIP HANDLING TERMS
  - REVIEW OF SHIP HANDLING PRINCIPLES, FORCES, SHALLOW WATER, WIND AND BANK EFFECTS
  - SHIP HANDLING WITH TUGS
  - SIMULATION EXERCISE
  - EMERGENCY RESPONSE

## OTHER ASSIGNMENTS

- BASIC MANEUVERS ON SCALE MANNED MODELS
- OBSERVE LOCKS OPERATION
- OBSERVE MARITIME TRAFFIC CONTROL (VTS)
- COMPLY WITH HARBOR WATCHES
- COMPLY WITH MINIMUM TRANSIT REQUIREMENTS FOR EACH LEVEL
- PERFORM REQUIRED OBSERVATION TRANSITS
- PERFORM EVALUATION TRANSITS
- PERFORM LICENSE EXAMINATION AT THE BOARD OF INSPECTORS

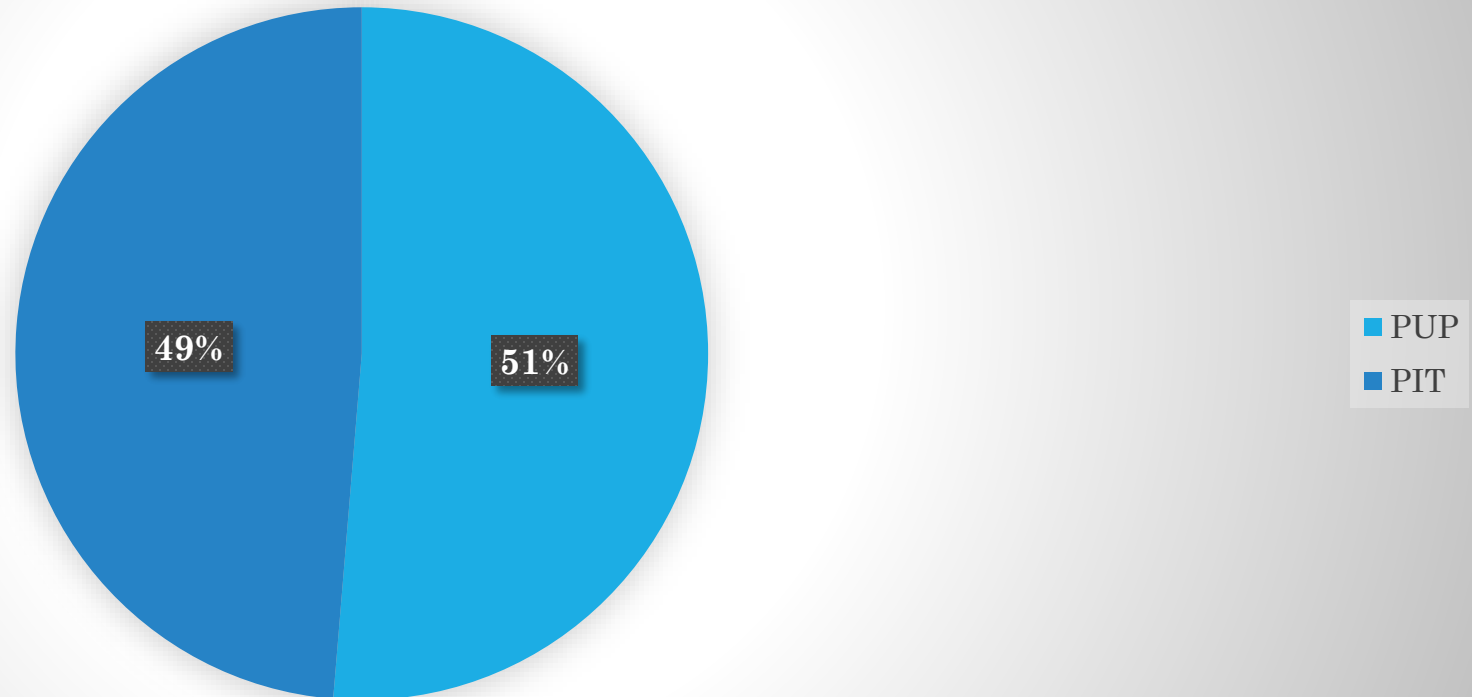
# The PIT Program



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CP-02	34	PRÁCTICO EN ADIESTRAMIENTO	20-24	40		Minimo dos (2) Viajes de Observación y VIAJE DE PRUEBA	Examen de la Junta de Inspectores para Licencia de Práctico
		225'	10-14	20	20,000 (CP-02) PIES	Puede asignársele a los tránsitos solos	

# How Many pilots have been trained in the last 41 years?

Pilot Trainees 1981-2022 (385)



Panamanian pilots in this Congress: 7 PUPs & 4 PITs

# The Limited Pilot

		225'	10-14	20	DESPLAZAMIENTO MENOR A 20,000 (CP-03) o 12,000 TONELADAS (CP-02) TONELADAS Y MANGA MENOR DE 80.0 PIES	Puede asignársele a los tránsitos solos	
CP-03	54	440'	22	50 <sup>1</sup>		Mínimo dos (2) Viajes de Observación y VIAJE DE PRUEBA	
		526'	32	80 <sup>1</sup>		Mínimo dos (2) Viajes de Observación y VIAJE DE PRUEBA	
<p><sup>1</sup>Con el propósito de cumplir con el mínimo de tránsitos requeridos para avanzar en los niveles dentro del grado CP-03, se podrán asignar hasta un máximo de cuarenta (40) tránsitos como observador en el nivel 440' y hasta un máximo de sesenta (60) tránsitos como observador en el nivel 526'. Dos (2) tránsitos como observador equivaldrán a un (1) tránsito como práctico de control.</p>							



# What was needed and what we learned

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- The Treaty forced us to move away from the traditional source of pilots (retired Navy Officers and Ship Masters) because there were not enough Panamanian Officers in that group
- We started training young Officers, always under the watchful eye of an experienced pilot
- A good comprehensive training program may overcome the lack of certain previous hands-on experience
- But, at the end, **nothing** will replace the experience and knowledge passed from one pilot to the next... from a senior pilot to a junior pilot

# Thank you!

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