



The Battle of the Scheldt -

**First Canadian Army Fire Support Plan –
Operation INFATUATE 1 and 2, October - November 1944**

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Young
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McKeever

26 October 2018



Introduction -

Aim –

To discuss the five elements of the First Canadian Army's Fire Support Plan for Operation Infatuate 1 and 2.

Given the targeting considerations in 1944, what would be different if the same operation was planned in 2018?

Outline –

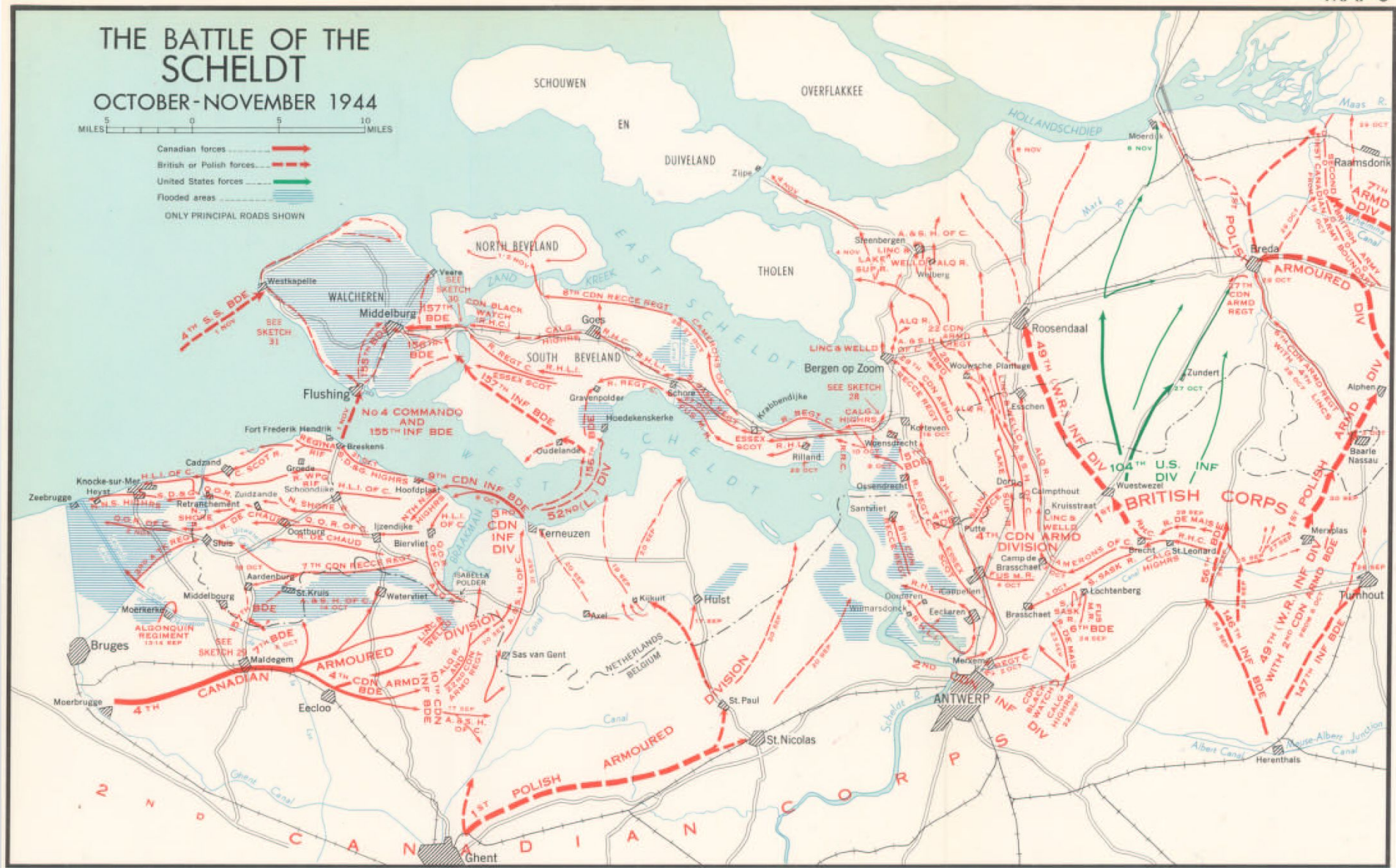
Part 1 -

- The Fire Support Plan for Operation Infatuate 1 and 2.
 - Strategic Aerial Bombardment
 - General Support Artillery
 - Tactical Air Support
 - Naval Gunfire Support
 - Naval Gunfire Support Squadron

Part 2 -

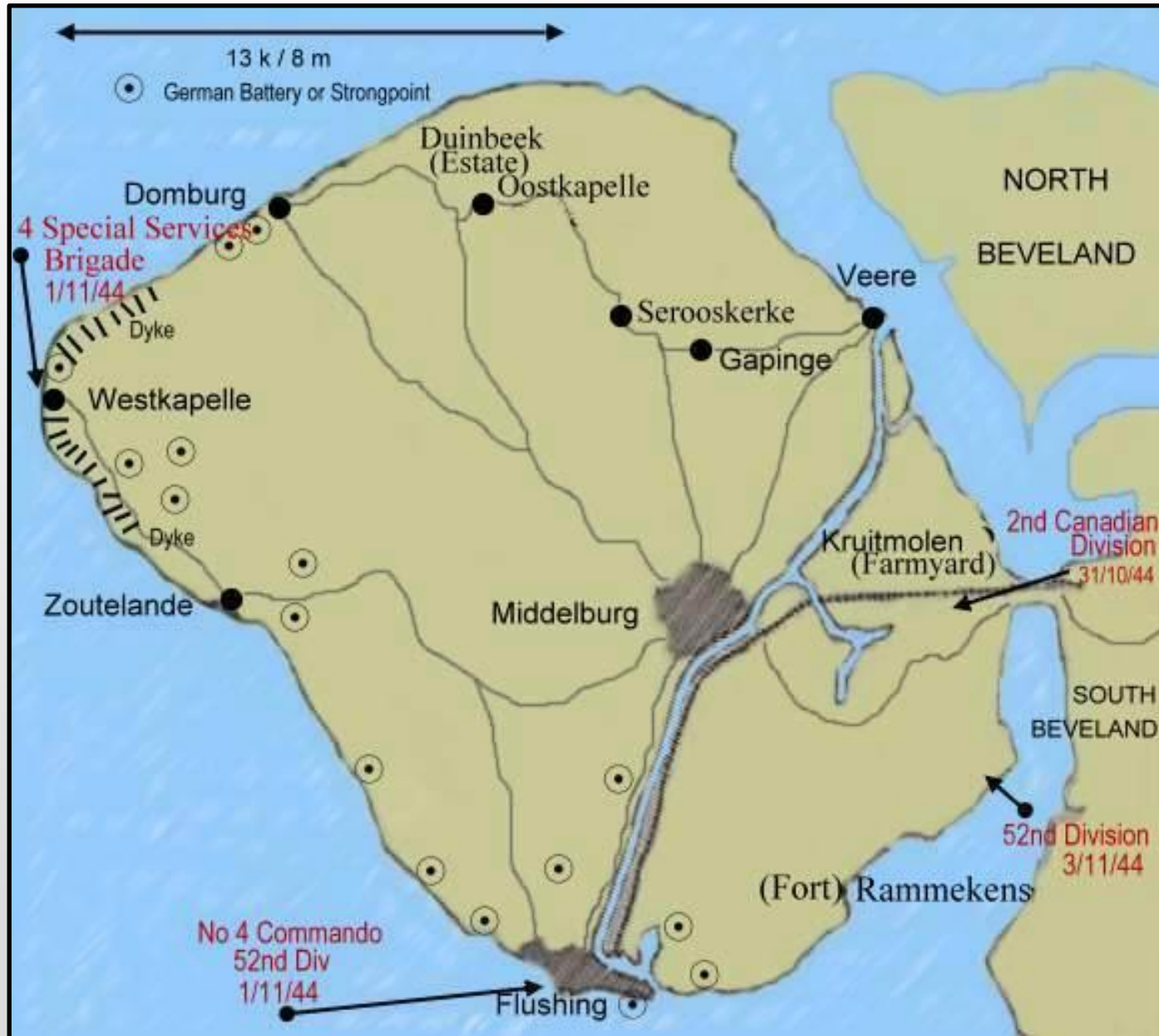
- Considering the operation through the lens of modern day targeting.
 - Modern targeting principles.
 - The 1944 considerations to flood Walcheren.
 - 2018 considerations to flood.
 - Planning considerations for the use of precision weapons.

The Battle of the Scheldt -



Stacey, C. (1960). *The Victory Campaign: Operations in North-West Europe 1944-1945* (Vol. 3). Ottawa: Ministry of National Defence.

The Battle of the Scheldt -



Combined Operations Command. (2018, October 12). *Operation Infatuate*. Retrieved from Combined Operations: <https://www.combinedops.com/Walcheren.htm>

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Legend



Gap in the Dyke

W15

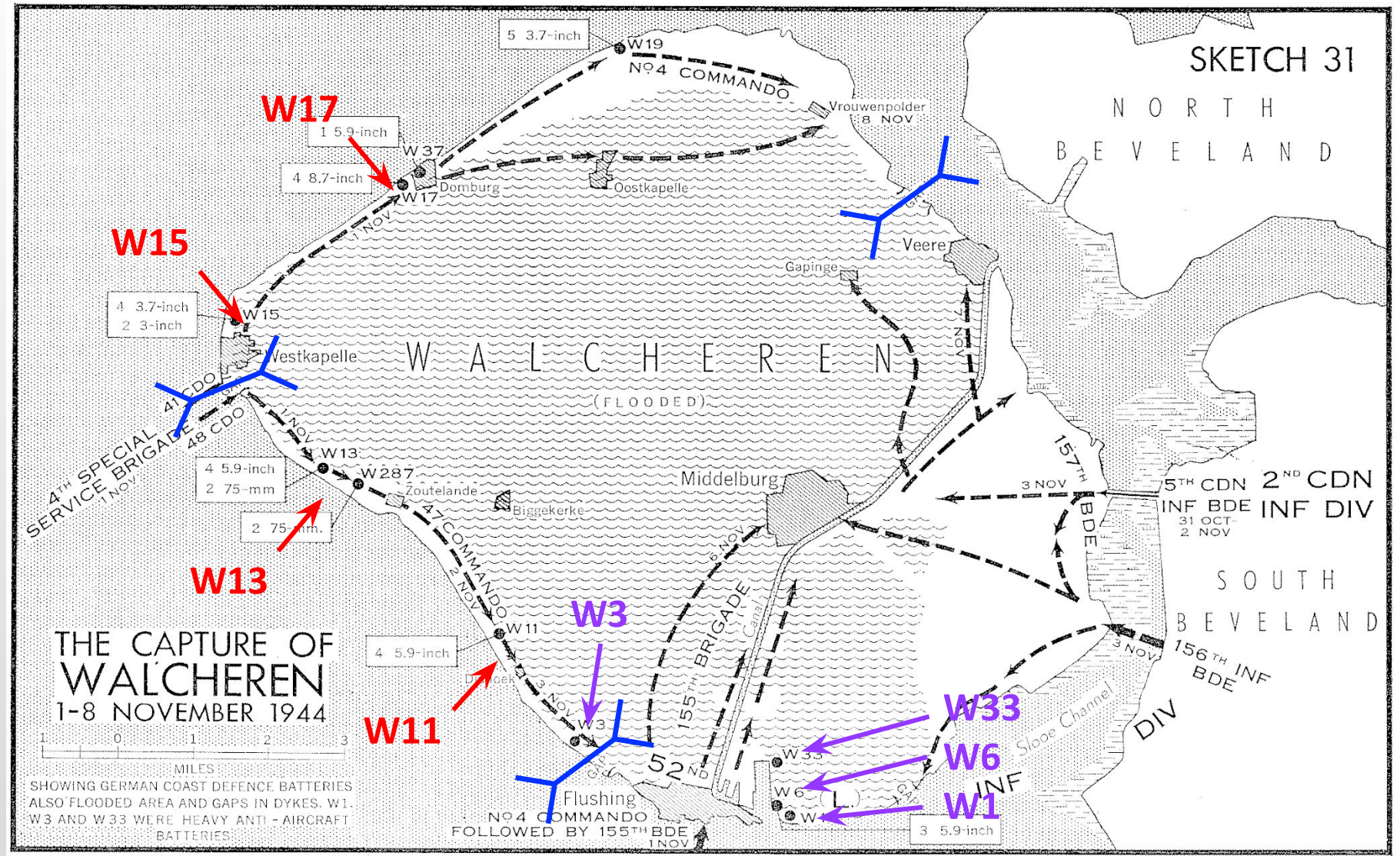
Key Coastal
Artillery Battery

W33

Strategic Bombing
Target 1 November



Flooded Area



Video – Canada at War – Press Film

Video



Canada at War Volume 3 - Episode 2 - Cinderella on the Left - Part 2. (2012, January 19). Retrieved October 2018, from YouTube: <https://www.youtube.com/watch?v=r5paJhZcp9w>

1 Canadian Army Fire Support Plan -

Operation Infatuate 1 - **Flushing**

Operation Infatuate 2 - **Westkapelle**



Strategic Bombing – Flooding Walcheren

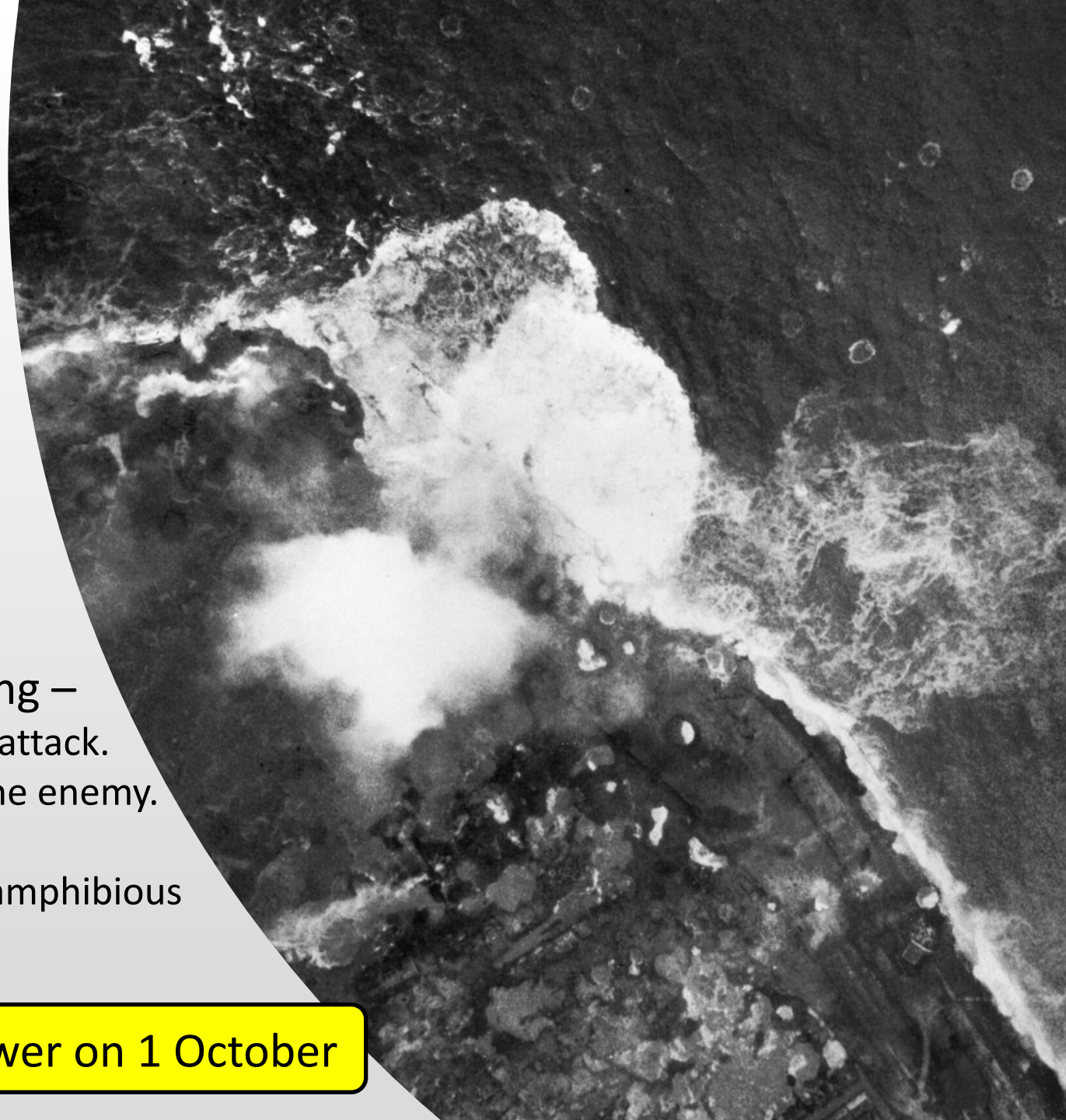
Two Considerations –

- **Practically Feasible** – Weight of bombs required to burst the dykes.
- **Politically Desirable** – The collateral damage caused by flooding.

Lieutenant General Simonds Notes for Flooding –

- Flooding will **concentrate enemy forces**. - Easier to attack.
- Flooding will **create administrative difficulties** for the enemy.
- Enemy **reserves will be destroyed** or immobilized.
- Breach in the dykes would **create an opening** for amphibious to gain access inland.

Flooding was **approved** by General Eisenhower on 1 October

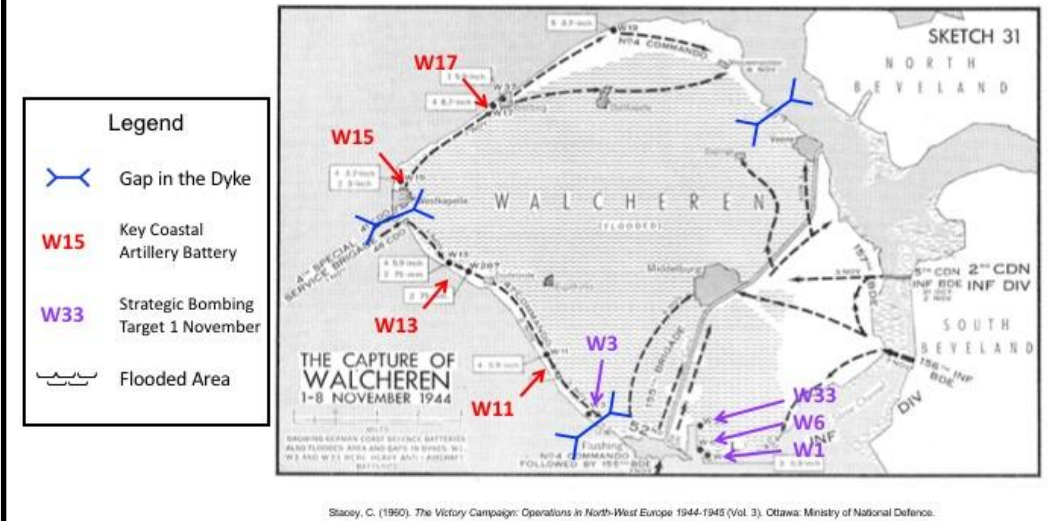


Strategic Bombing – Flooding Walcheren -Results

- General Daser – 70th German Division
 - Westkapelle breach could be contained.
 - Flushing and Veere – Hopeless to contain the breach.
- Flooding did disrupt the enemy lines of communication.
 - Battery W13 ran out of ammunition.
 - Enemy reserves were immobilized.

Bombing the dykes produced better than expected results. Flooding did have an effect on the combat effectiveness of the enemy, but caused considerable collateral damage.

The Battle of the Scheldt -



Strategic Bombing – Flooding Veere -



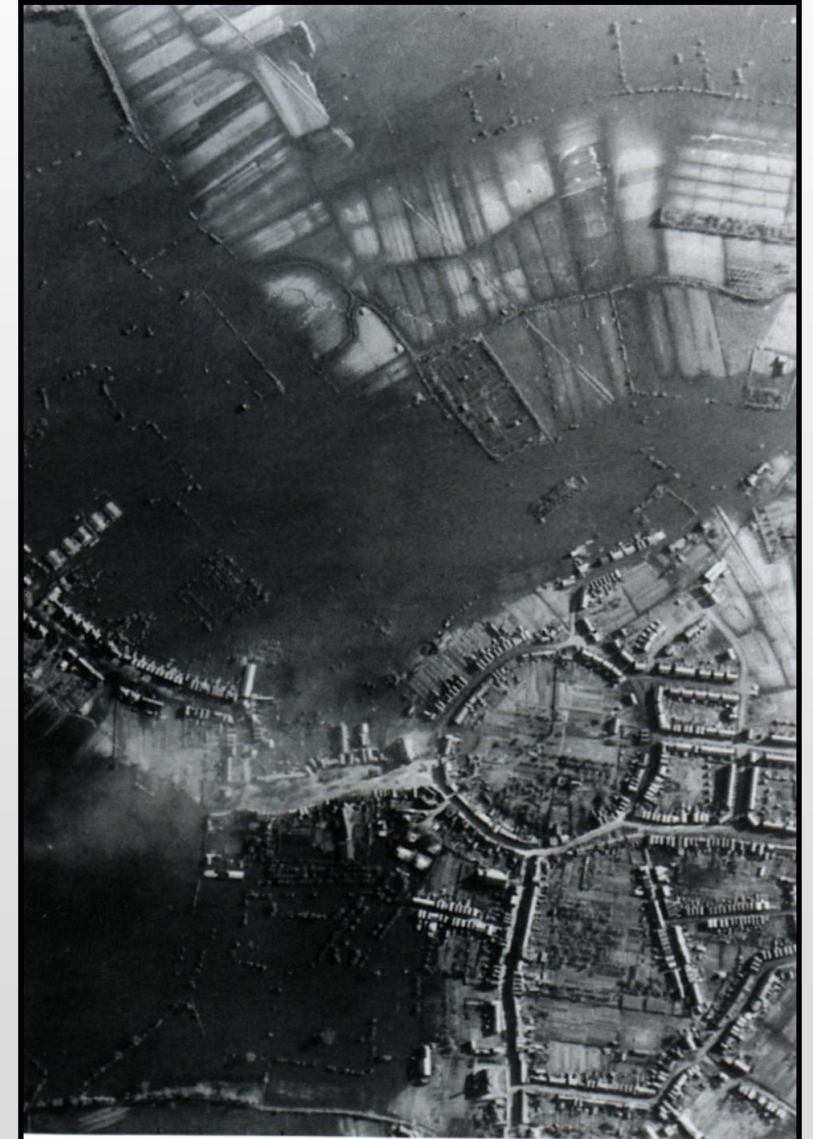
Slag On de Schelde. (2018, October 12). Retrieved from Zeeland 1940 - 1945: Een Overzicht Van Gebeurtenissen: <https://www.oorlogzeeland.nl/index.php/scheldeslag-start>



Strategic Bombing – Flooding Westkapelle



Strategic Bombing – Flooding Flushing -



Strategic Bombing – Flooding – Collateral Damage



Strategic Bombing – Enemy Targets

- Strategic Bombing Priorities – **33 Targets**
 1. Flooding Operations
 2. Anti-Aircraft Batterys
 3. Coastal Artillery that would effect Naval Bombardment
 4. Batteries capable of firing upon Breskens
 5. Other Artillery Batterys
- When Airborne Forces were not made available for the assault, Eisenhower directed **priority use** of Bomber Command and the 8th Air Force.
- Only **strategic bombing** and **naval gunfire** had the weight of fire capable of **destroying concrete gun casemates and bunkers**.



Strategic Bombing – Enemy Targets

- Bomber Command **did not give the priority support** to the Scheldt but rather the Ruhr Valley in Germany.
 - 5 times more bombs were dropped in Germany than in Walcheren during period of the battle.
 - If all the resources of Bomber Command were used on one attack, there would have been a 50% probability that one 6 gun Battery would have been destroyed. There were 33 targets.
 - Bad weather was also a factor (31 October and 1 November).

Bomber Command **significantly underestimated the weight of resources** required to **destroy** the gun casemates and bunkers.

The target list could have been prioritized to **concentrate the appropriate weight of bombs** on the most critical targets (W13, W15). Given the total tonnage dropped, there would have been a 90% probability to destroy 9 of 12 guns in W13 and W15 (most dangerous targets).




Strategic Bombing – Enemy Targets - Flushing

- 4 targets in Flushing **W3, W1, W6, W 33** –
 - 2 in the Docks East of Uncle Beach
 - 2 in the City on bottlenecks from the waterfront.

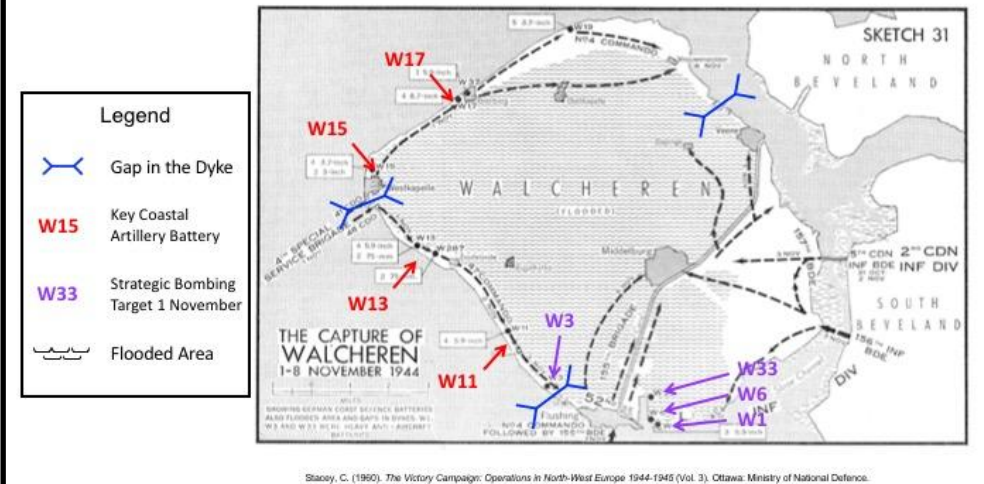
- There was considerable **concern** over the bombing of these four targets.

- Bomber Command
- Supreme Commander – General Eisenhower
- Dutch Government in London
- Prime Minister Churchill

- The bombing was **approved**. The mission  was however **cancelled** due to bad weather on 1 November. It was replaced by **Tactical fighter bombing** and **artillery**.

Strategic Bombing would have caused **more collateral damage** with **questionable results**. A question of **proportionality**.

The Battle of the Scheldt -



General Support Artillery

- 314 guns supported the battle from Breskens.
- Field and Rocket Artillery **could not destroy** concrete casemates and bunkers but could **neutralize** and **suppress** the enemy to cover the assault river crossing to Flushing and the seaborne landings at Westkapelle.
- Heavy Artillery is **not suitable** for **close support** of infantry advancing from the landings.
- Some of the gun positions in Breskens were only cleared of enemy the night prior to the assault.

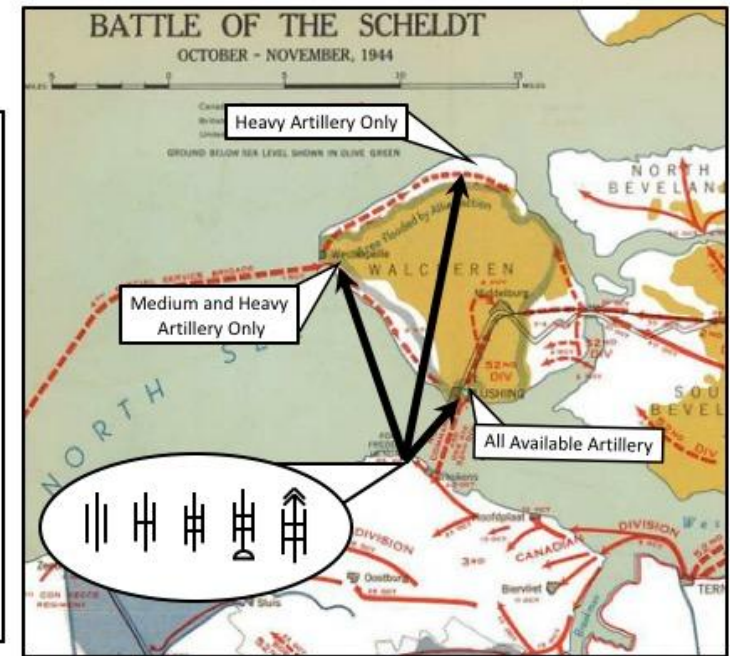
Artillery is **all weather capable** providing guaranteed fire support when strategic and tactical air support could not.

The **neutralizing** and **suppressive fire** from the artillery replaced the **destructive firepower** of strategic bombardment and supplemented Naval Gunfire Support.

Field Artillery -

Legend – 314 Guns

	Light Field Artillery 4 Field Regiments
	Medium Field Artillery 7 Regiments
	Heavy Field Artillery 3 Heavy Regiments 2 Super Heavy Regiments
	Heavy Field Anti-Aircraft Artillery (Surface Role) 2 Regiments
	Rocket Artillery 1 Regiment



Artillery Fire Support Plan – 1 November

- **Counter Bombardment Fire** against enemy gun positions was conducted the day prior to the assault.
- Fire support plans were **sequential** to **maximize the number of guns** supporting both Flushing and Westkapelle.
- Enemy Artillery shelled the Breskens gun positions, Uncle Beach in Flushing, and the Assault river and Landing Craft approaching both of the beaches.



Operation Infatuate 1 - **Flushing**

- Three on call fire plans were designed.
- 300 guns fired for 60 minutes prior to the river crossing. 45 minutes longer to account for no strategic air
- Fire was moved to the flanks to permit assault force to see and find the beaches.

Operation Infatuate 2 - **Westkapelle**

- Timed fire plan for 210 minutes.
- Artillery steadily engaged enemy casemates and bunkers throughout the fire plan.

Tactical Air Support -

- 2 Tactical Air Force fighter bombers conducted 646 sorties against Flushing between 28 – 30 October.
- Fighter bombers (Typhoons and Mosquito bombers) were added to the fire support plan to replace the strategic air bombardment on 1 November.
- Fighter bombers attacked the beaches prior to the landings at both Flushing and Westkapelle.

The weight of fire from fighter bombers was not sufficient to destroy concrete casemates and bunkers.

The rubbing of the city of Flushing by fighter bombers and artillery defeats the purpose of neutralizing enemy fortifications.



Naval Gunfire Support

- Three ships were available to support the seaborne landings in Operation Infatuate 2 at Westkapelle.
 - HMS Warspite – Battleship
 - HMS Roberts – Monitor
 - HMS Euebus - Monitor
- Naval gunfire was **more accurate** than strategic air bombardment.
 - 500 shells to have a 90% probability of destroying the 4 casemates of a Coastal Artillery Battery.
- Naval Gunfire Support was limited to the assault only.
 - It took three days to resupply ammunition in England.
- The sea mine threat **restricted their bombardment** to 20,000 yards from the coast.
 - They required aerial spotters to adjust their fire at such a long range.
 - Poor weather grounded the aircraft for the assault.

Naval Gunfire Support was the **most effective weapon** against concrete casemates and bunkers but was **limited** by **lack of air spotter support** and **ammunition resupply**.



Naval Support Squadron

- The seaborne landing force at Westkapelle was supported by its own integral indirect fire support squadron.

- 6 Landing Craft Gun (Large)
- 2 Landing Craft Gun (Medium)
- 6 Landing Craft Flak
- 6 Landing Craft Support (Large)
- 5 Landing Craft Tank (Rocket)
- 2 Landing Craft Headquarters

Landing Craft Support (Large)



Landing Craft Gun (Large)



Landing Craft Tank (Rocket)



Landing Craft Flak



Landing Craft Gun (Medium)



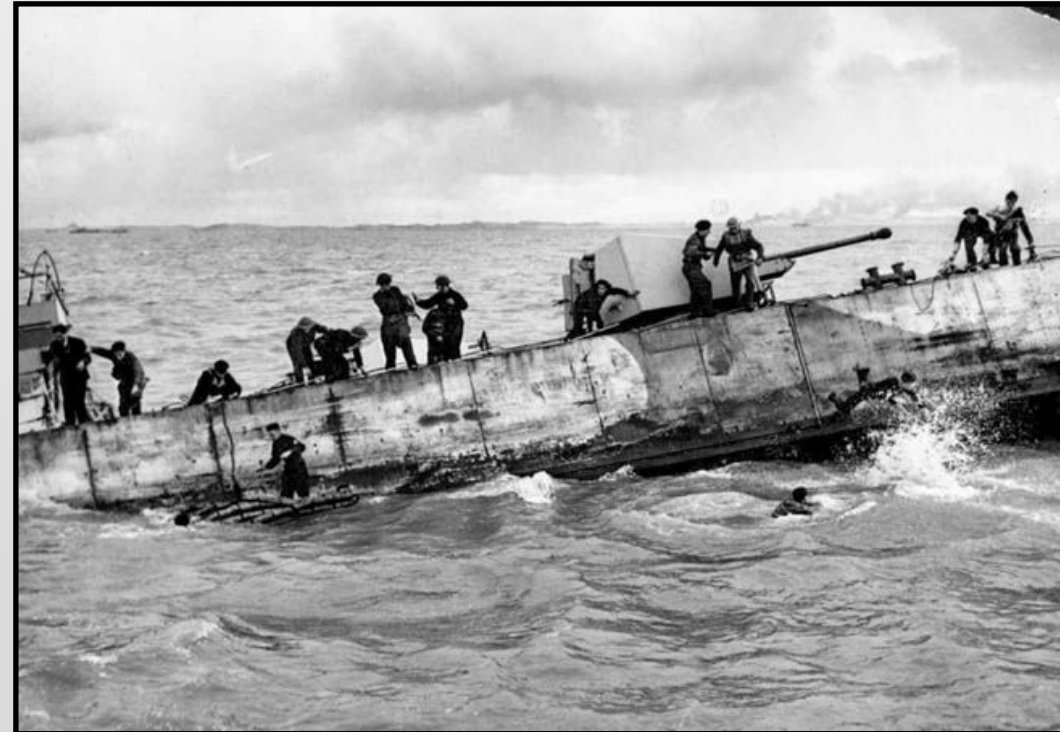
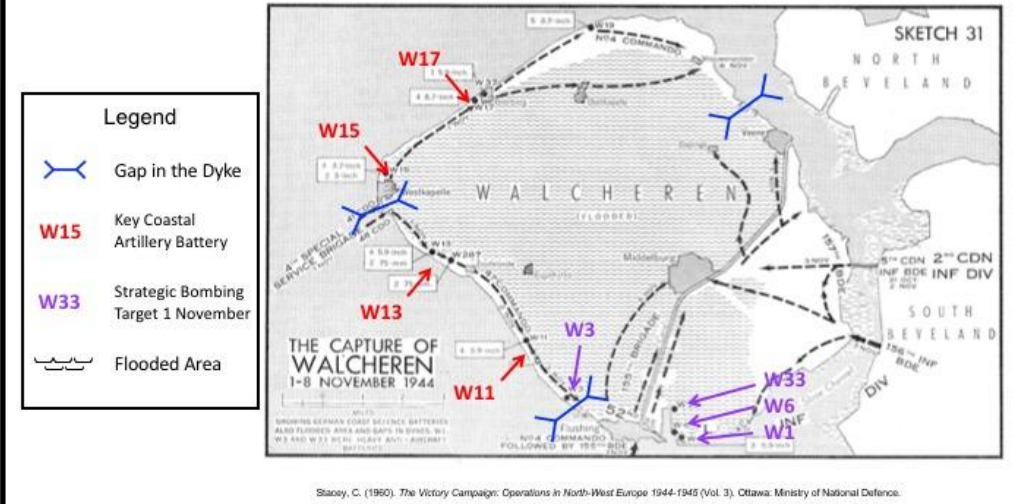
Naval Support Squadron

- Enemy coastal artillery engaged the support squadron instead of the landing crafts with the assault force.
- Naval Support Squadron **Losses**: 16 of 27 vessels –
 - 9 Sunk or sinking
 - 7 Damaged out of action
 - 4 Damaged but in action
 - 7 Fit for action
 - **172 killed** and **125 wounded**.
- W13 was the most effective enemy Battery. It ran out of ammunition after firing 200 rounds per gun.

Naval Support Squadron drew the enemy fire away from the assaulting force.

Naval Support Squadron was **not capable** of **destroying concrete casemates and bunkers**.

The Battle of the Scheldt -



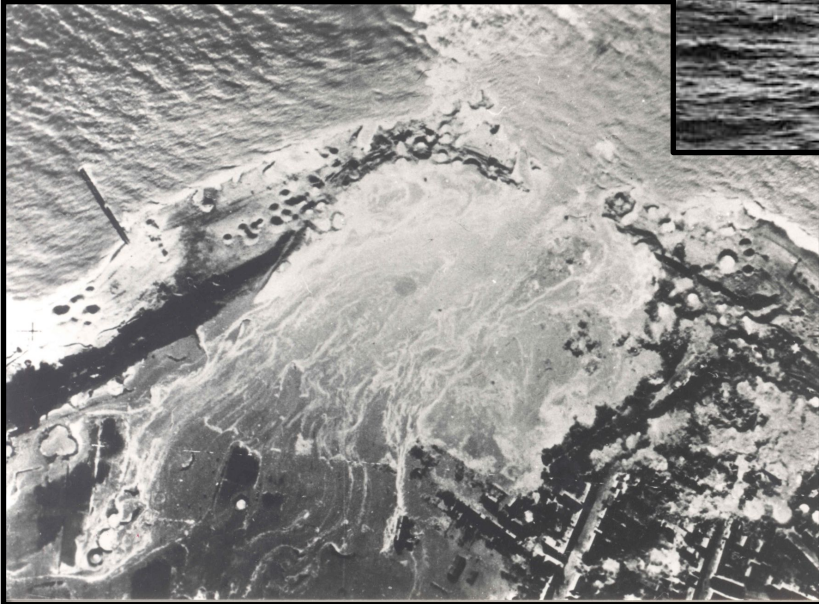
Targeting Lessons Identified -

- Bombing the dykes produced **better** than expected results. Flooding did have an effect on the combat effectiveness of the enemy, but caused **considerable collateral damage**.
- Bomber Command **significantly underestimated the weight of resources** required to **destroy** the gun casemates and bunkers.
- The target list could have been prioritized to **concentrate the appropriate weight of bombs** on the most critical targets (W13, W15).
- The strategic Bombing of Flushing would have caused **more collateral damage** with **questionable results**. A question of **proportionality**.
- The **rubbling** of the city of Flushing by fighter bombers and artillery defeats the purpose of neutralizing enemy fortifications.
- Artillery is **all weather capable** providing guaranteed fire support when strategic and tactical air support could not.
- Naval Gunfire Support was the **most effective weapon** against concrete casemates and bunkers but was **limited** by **lack of air spotter support** and **ammunition resupply**.



Targeting 2018 -

Given the targeting considerations for the 1st Canadian Army's Fire Support Plan for Operation Infatuate 1 and 2 in 1944, what would be different if the same operation was planned in 2018?



Lieutenant-Colonel David McKeever, Royal Canadian Artillery

- Director of the Canadian Army Land Targeting School, a sub- unit of the Canadian Army Command and Staff College in Kingston Ontario.
- 32 years of Service, including operational deployments in Bosnia as part of NATO Stabilization Force in 1998; and in Afghanistan in 2006.
- Bachelor of Arts in Political Science (University of Guelph, 1992) and Master of Science in the Art and Science of Warfare (National Defence University in Islamabad, 2012)
- Pakistan Army Command and Staff College in Quetta, Pakistan, 2012
- Instructor in Gunnery and Technical Staff Officer
- Involved in the force development and evolution of the Canadian Armed Forces Targeting program from 2013 until present.

The Modern Day Problem -

Consider the Battle of the Scheldt Estuary and Operation INFATUATE through the lens of modern targeting principles.

- Introduction of modern targeting principles
- Mission analysis leading to the decision to flood WALCHEREN Island
- Consideration if the decision to flood WALCHEREN would be recommended today
- An explanation of planning considerations when utilizing precision weapons of today

Modern Targeting Basics -

- The entirety of the modern targeting process is designed to answer **four basic questions**:
 - What is the **desired effect** to be produced on / to the target? A matter of strategy and tactics considering an adversary's capability.
 - Should the target be effected? **A commander's perspective.**
 - May the target be effected? **A legal perspective.**
 - Can the target be effected? **A physical perspective.**
- If all four questions can be answered positively, a target is struck, if not it is either reconsidered with a different effect in question one, or it is abandoned.

Lieutenant General Guy Simonds - Commander 1st Canadian Army -

Thoughts on operations in the Scheldt Estuary -

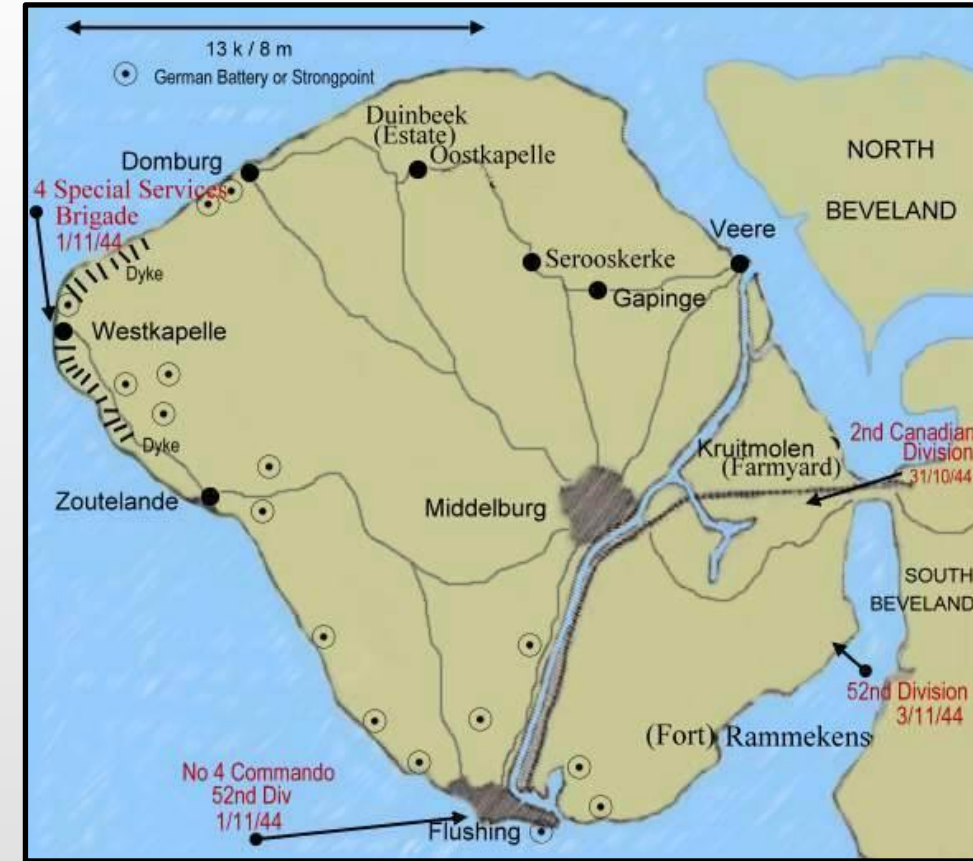
“As I understand it, the object of the operation is NOT to capture the islands of WALCHEREN and SUID BEVELAND, but to **destroy, neutralize or capture enemy defences** which deny us free passage through the WEST SCHELDT to the port of ANTWERP.”



Targeting Walcherens Defences –

What were the desired effects?

- DESTRUCTION of coastal defences
- NEUTRALIZATION of defence in depth by German forces on the island, restricting them to high ground only
- CAPTURE and eventual CLEARANCE of German forces on the island



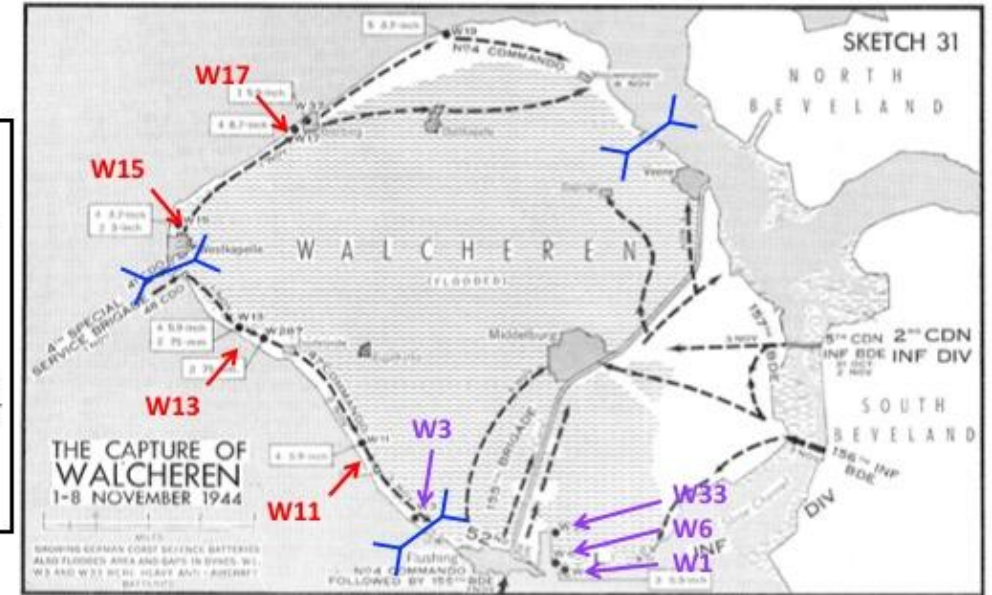
“Bombing operations should be undertaken to break the dykes and completely flood all parts of the island below high water level. Those parts of the island which remain above water should then be systematically attacked by heavy air bombardment day and night to destroy defences by attrition”

Targeting Walcheren -

Should Walcheren be flooded?

- Does striking the target support the military objective?
- Is it necessary to strike this particular target?
- Is the risk worth the reward?

The Battle of the Scheldt -



Stacey, C. (1960). *The Victory Campaign: Operations in North-West Europe 1944-1945* (Vol. 3). Ottawa: Ministry of National Defence.

WALCHEREN could not be bypassed, the question was the best way to effect the German defences.



Targeting Walcheren -

- May the Island of WALCHEREN be flooded?
- Would it be [legal](#) to consider in 2018?
- Can the desired effect be achieved with the following constraints under the Law of Armed Conflict?
 - Military [Necessity](#)
 - Humanity
 - [Distinction](#)
 - [Proportionality](#)
 - Command Responsibility



Targeting Walcheren -

Was the decision to flood WALCHEREN justifiable in 1944?

- In the logic of the day – yes it was, civilian considerations were made but were over-ruled by the necessity to defeat the entrenched German defences.
- Dug in defences were very difficult to destroy with bombing.
- The risk to the allied force tasked with clearing the island was deemed to outweigh the risk to the population and to the island itself.



Targeting Walcheren -

Would the decision to flood WALCHEREN be justifiable in 2018?

- No it would not.
- Flooding the island fails the test of necessity, humanity, distinction and proportionality.
- But...the task to neutralize and capture defending forces would be more difficult...



Targeting Walcheren -

Principles of Targeting – Humanity

- Forbids the infliction of suffering, injury or destruction not actually necessary for the accomplishment of legitimate military purposes.
- Confirms basic immunity of civilian populations and objects from being objects of attack during armed conflict.
- Does not preclude collateral damage (civilian casualties and damage to civilian property may occur)

The Concept of the inundation of **WALCHEREN** fails the test for Humanity due to the immense probable impact on the civilian population.

Targeting Walcheren -

Principles of Targeting – Distinction

- Obligation on parties to distinguish between **legitimate military targets** and **civilian objects / population (illegitimate targets)**

AND

- Only direct operations against legitimate military objectives (persons, places, things)
- Prohibits indiscriminate attacks
- Requirement to establish Positive Identification, and understanding of civilian Pattern of Life and an understanding of the enemy Pattern of Activity

The Concept of the inundation of **WALCHEREN** fails the test for Distinction due to the immense probable impact on the civilian population.

Targeting Walcheren -

Principles of LOAC for Targeting – Distinction

Starting Point:

- Civilians / Civilian Objects shall not be the object of attack.
- A civilian object is any object that is not a military objective.

Legitimate Targets:

- Military objectives, combatants and civilians who are directly participating in hostilities.

A dyke is a CATEGORY 1 No Strike List protected Entity. It is not to be directly engaged without approval by the highest Military authority – in Canada the authority is held at the Chief of Defence Staff. In many other nations it is held at the political level.

Targeting Walcheren -

Principles of Targeting – PROPORTIONALITY

Proportionality Principle:

- Is the attack expected to cause collateral damage (incidental loss of civilian life / damage to civilian objects) which would be excessive in relation to the concrete and direct military advantage expected
- If Yes, must cancel / suspend the attack

The Concept of the inundation of WALCHEREN fails the test for Proportionality due to the immense probable impact on the civilian population.

Targeting Walcheren -

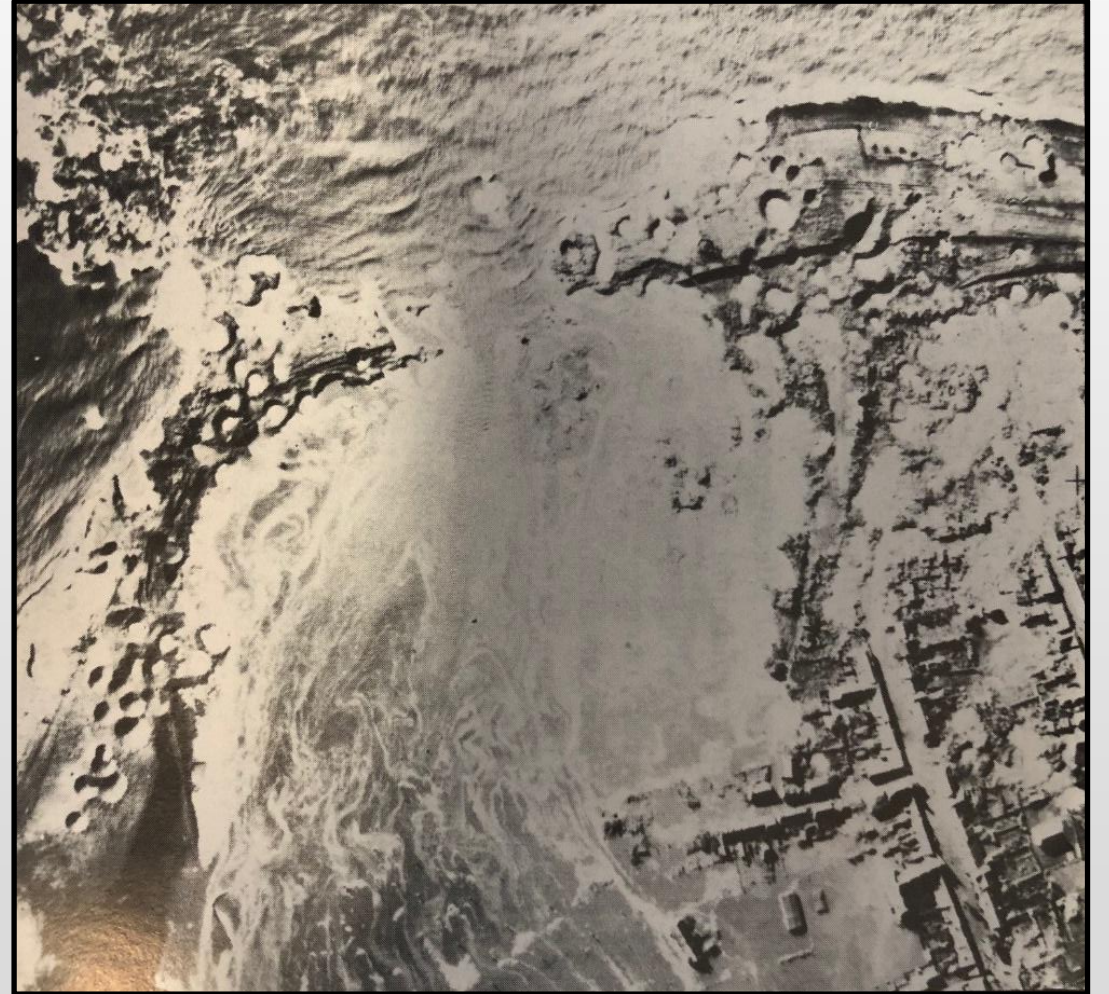
Can the Island of WALCHEREN be flooded?

- Creating the breaches took a huge tonnage of bombs and caused immense collateral damage in the process.
- If the intent was to create a breach in 2018 (which has already been shown to be highly unlikely) the methodology would have some significant differences, and would retain some interesting similarities.
- Breaching would still involve significant tonnage of precision weapons, and would require timing with tides to enable the sea to do the majority of the work moving sand.
- Civilian Infrastructure in proximity to the breach site would suffer significantly less collateral damage with an accompanying reduction of civilian casualties. Perhaps as low as none as a direct result of blast and fragmentation, but the island would still flood and civilian casualties as a result of the flooding could not be avoided.



Targeting Walcheren -

Dyke Breach at WESTKAPPELLE before and after bombing -



Targeting Walcheren -

Principles governing the use of precision weapons in order to minimize civilian casualties

- The following planning considerations are used by NATO today to minimize the effect of operations on civilian populations:
 - Positive Identification of the Target
 - Collateral Damage Estimation
 - Civilian Casualty Estimation
 - Pattern of Civilian Life
 - Timing of Strike
 - Use of warning to affected populations

Targeting Walcheren -

Canada has not forgotten the price paid by the Dutch civilians



The consequences were enormous;
the people of Walcheren had to live with the salt water for over a year.

Summary -

- The First Canadian Army's Fire Support Plan for Operation INFATUATE 1 and 2 was a success.
- The flooding of Walcheren did have an effect on the outcome of the battle, but at considerable collateral flood damage.
- Collateral damage in Flushing could have been more extensive if it was not for poor weather.
- Naval gunfire was the most effective weapon against the concrete casemates and bunkers but it was degraded by the lack of aerial spotting aircraft.
- The rubble of the city was counter-productive to destroying enemy fortifications as it became another type of fortification.
- In 2018, given the weapons systems and targeting practices of a modern day western military, the Fire Support Plan to the strategic problem in Walcheren would be considerably different.
 - It would be inappropriate to flood the island, as targeting the dykes do not satisfy the test regarding the principles of targeting.
 - Precision munitions would have destroyed all of the casemates and bunkers, thereby achieving the Commanders stated mission, "to destroy, neutralize, or capture the enemy defences."

ARMÉE
CANADIENNE



CANADIAN
ARMY

Discussion





The Battle of the Scheldt -

**First Canadian Army Fire Support Plan –
Operation INFATUATE 1 and 2, October - November 1944**

**Colonel Tim
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