オランダの高潮（1953年１月31日）

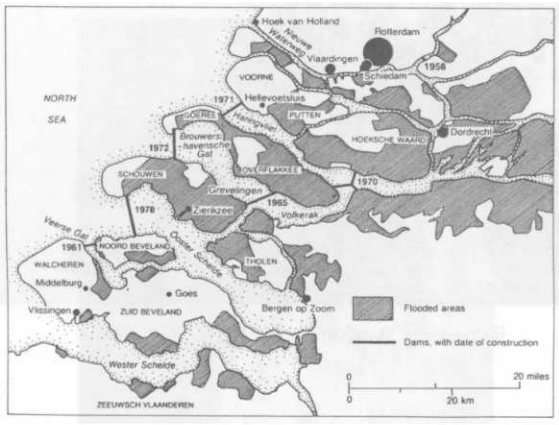
１．被害概要

１月31日、スコットランドの北西で発生した大低気圧は、その後北海上空で南に向きを変えながら、気圧はなお下がり続けた。翌日の正午までには、ハリケーンの威力を持つ強風にあおられた海水が、春の高潮と重なって、オランダの100カ所の堤防を越えて浸入し、400万エーカー以上の低地を水浸しにした。２月１日までには、オランダのほぼ６分の１が水中に沈み、ゼーラント地方のデルタ地帯やトーレン島、スハウエンドイヴェラント島などで最もひどい洪水が発生した。オランダでは、約２千人が溺死し、イギリスの海岸でも300人が死亡した。被害はきわめて甚大で、1,100kmの堤防のうち500km以上が被害を受け、67カ所に大きな亀裂が入り、500カ所に小さな亀裂が入った。また、2,600家屋が倒壊し、５万家屋が被害を受けた。両国で約30万人が直接影響を受け、負傷したり財産を失ったりした。

オランダでは、農業に対する損害は非常に大きかった。農地の9.4%と牧場の3.4%が冠水し、牛３万５千頭、豚２万５千頭、鶏10万羽が失われ、約450の農場が全滅し、その他約100の農場も大きな被害を受けた。被害総額は、３億米ドル以上に及んだ。

２．対策

1953年の洪水後、南西部に全長25マイルの新堤防を建設するという６億５千万ドルの計画が立てられた。新堤防は三列の防御壁からなり、一番外側の壁は岸堤防上にあって、最も大きく頑丈な物であった。また、三番目の壁は、個々の農場の回りに作られた小さな堤防やダムであった。



The delta area of Holland, showing areas flooded in Jan 1953 and the subsequent remedial measures (John Whittow 'Disasters', pp.123, fig 35)

THE FLOOD DISASTER IN THE NETHERLANDS (31 January 1953)

1. Flood and Resulting Damage

The atmospheric depression which formed over the northwest part of Scotland on 31 January 1953 turned to the south above the North Sea, while pressure continued to decrease By noon on the next day, sea water, which had been blown by hurricane-force winds breached the dykes at 100 points across the Netherlands Low land of 4 million acres was flooded One-sixth of the country was submerged before 1 February The flood damaged the delta areas of Zeeland, Tholen and the Sohouwen Duiveland most The death toll due to drowning was about 2,000 in the Netherlands, and 300 on the coast of England. The damage was enormous, more than 500km out of 1,100 km of dykes were damaged, with 67 fissures and 500 smaller cracks. In addition, 2,600 houses were destroyed and 50,000 were damaged It was estimated that about 300 thousand people were directly affected, injured, or deprived of their properties both in England and the Netherlands. In the Netherlands, the agricultural sector was particularly hard hit The damage caused by flooding was as follows 9.4% of farmland and 3.4% of pasture were inundated, 35,000 cows, 25,000 pigs and 100 thousand chickens were killed and, 450 farms were completely destroyed and about 100 were severely damaged The total loss was estimated at over US$300 million.

2 Countermeasures

After the 1953 flood disaster, construction of 25 miles of new dykes in the southwest of the country was planned. The plan was worth US$ 650 million. The dykes consisted of three lines of protection walls. The outer walls, which were the largest and strongest, were built on the seashore dykes. The innermost walls consisted of the small dykes and dams built around individual farms

(John Whittow, "Disasters", pp 125, photo 16)

伊勢湾台風（1959年９月26日、日本）

１．災害

1959年９月26日夕刻、潮岬付近に上陸した台風5915号（伊勢湾台風）は北北東に進み、名古屋市の西を通って日本海へ抜けた。潮岬測候所での最低気圧は、925.5mbで、これは本州における記録的な低さであった。この台風による風、雨、さらに洪水・高潮は大変激しいものであり、死者・行方不明5,101名、日本における最悪の台風となった。

２．経過

同台風は９月20日に発生、９月23日にはマリアナ北方で中心気圧894mbという超大型台風となり、その後あまり衰えず本州を直撃した。台風東側の強風域は伊勢湾上に位置し、したがって伊勢湾（名古屋港を含む）において記録的な高潮となった。正確な統計はないが、死者の多くは高潮による溺死と推定された。台風は、９月26日18時過ぎに上陸したが、この日は土曜日であったため、一般に防災対策に遅れが生じた。長期的には都市開発・地盤沈下などで土地条件が変化していた上、この地域には過去長い間台風が来襲しなかったため、反省すべき点が多くあった。

３．被害

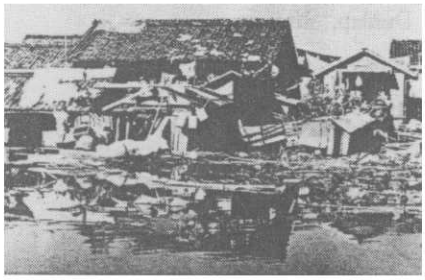
死者・行方不明5,101名、負傷者38,917名、全壊家屋36,138棟、半壊家屋113,052棟、流失家屋4,703棟、床上浸水157,858棟、床下浸水205,753棟、被災世帯337,152、被災者1,532,854名、水田の流失埋没9,842ha、水田の冠水146,802ha、畑の流失埋没5,970ha、畑の冠水41,693ha、船舶の沈没1,137隻、船舶の流失1,293隻。

４．復旧

救助・復旧作業は直ちに行われたが、地盤が海面下の地域では締切堤が完成して排水するのに４ヶ月以上かかった。

５．その後の対策

・災害対策基本法が制定された。
・防災担当機関ごとに異なっていた防災構造物の設計基準が統一された。
・各機関の調整が必要であることが認識された。
・この台風を最悪例として諸対策が実施されるようになった。
・土地条件と防災に関する意識高揚に対しての関心が高まった。



Clothes and Bedclothes washed in muddy water are being dried on the roof. Nakamachi. Nagashima Town ("PHOTOGRAPHS THE ISE BAY TYPHOON DAMAGE", Chubu Regional Construction Bureau, Ministry of Construction and United Nations Centre for Regional Development)

TYPHOON ISEWAN (26 September 1959／Japan)

1. Disaster

After dark, on 26 September 1959, Typhoon No.5915 approached Shiono Point, traveled to the north-north east and went through western Nagoya toward the Japan Sea. The barometer of the Shiono Point weather station measured a minimum atmospheric pressure of 925.5 millibars, which has been the lowest recorded in Honshu. With extremely violent winds, rain, floods, and tidal waves, it was an extremely severe typhoon, which had a toll of 5,101 persons killed or missing.

2. Progress

Formed on 20 September,the typhoon developed on 23 September to have a very high intensity with a central atmospheric pressure of 894 millibars in the northern Marianas. It hit Honshu with almost the same power. The eastern gale area was located in Ise Bay, and the tidal wave was the highest ever recorded in Ise Bay (including Nagoya Port). It is assumed that the majority of the persons killed were drowned in the tidal wave, but the number is not recorded. Because the typhoon hit after 6 pm on Saturday, disaster prevention measures were not sufficiently implemented. Authorities did not take into account that the land-use pattern in the area had changed due to urban development or with soil subsidence. Preparedness was insufficient also, as typhoons had not approached the area for a long time.

3. Resulting Damage

The damage recorded is as follows:

Persons killed or missing	5,101	
Persons injured	38,917	
Houses completely destroyed	36,138	
Houses partially destroyed	113,052	
Houses washed away	4,703	
Houses flooded (above floor)	157,858	
Houses flooded (below floor)	205,753	
Victims (family)	337,152	
(individual)	1,532,854	
Paddy field washed away or buried	9,842	ha
Paddy field submerged	146,802	ha
Fields washed away or buried	5,970	ha
Field submerged	41,693	ha
Ships sunk	1,137	
Ships adrift	1,293	

4. Recovery

Rescue and recovery work began immediately, although it took more than four months to enclose the area below sea level and pump out the water.

5. Measures taken after the Typhoon

* The Basic Act of Protection against Disasters was enacted.
* The building code for disaster prevention in construction, which had previously been different from one disaster prevention agency to another, was unified.
* It was recognized that coordination among agencies is extremely important.
* Considering that this typhoon was one of the worst ever, the authorities have implemented a number of measures for disaster prevention.
* Public awareness of land-use patterns and disaster prevention has been stimulated.