

Wargame Calibration

Connections UK

Development Panel

Volko Ruhnke

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Development – Model Building, Calibration, Play

Harpsichord kit



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Harpsichord kit



Built



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Harpsichord kit



Built



Tuned



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Harpsichord kit



Built



Tuned



Played



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Wargames Need Calibration - Premises

- Wargames **model** complex adaptive systems.
- Models simplify their subject **to purpose**.
- System behavior stems from **parameters**.



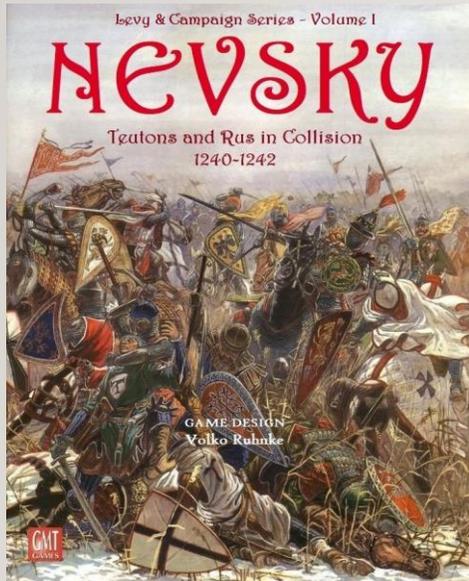
Wargame Development - Two Terms

- **Calibrated:** The model's outputs are interesting for its *purpose*.
- **Accurate:** True; the model converts inputs to outputs similarly to the *modeled system*.



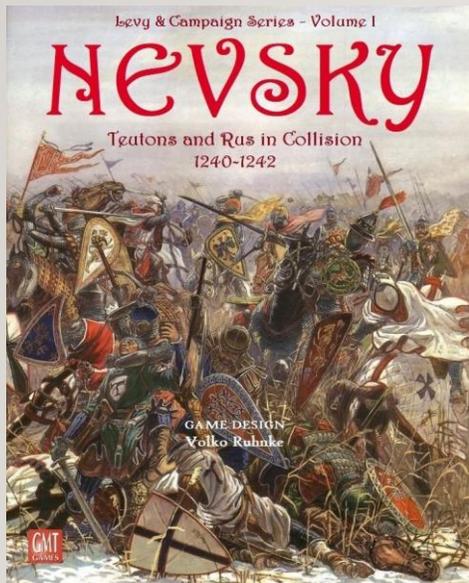
Calibrated versus Accurate - Example

- **NEVSKY:** Commercial board wargame depicting military operations in 1240-1242.
- **Purpose:** Fun strategic gameplay that transports players to medieval Russia.



Calibrated versus Accurate - Example

- *Perhaps Accurate, but not Calibrated:* Russians win every game that Nevsky is on the board.
- *Perhaps Calibrated, but not Accurate:* Russians win less often when Nevsky is on the board.



Calibrated versus Accurate - Example

- *Perhaps Accurate, but **not Calibrated***: Russians win every game that Nevsky is on the board.
- *Perhaps Calibrated, but **not Accurate***: Russians win less often when Nevsky is on the board.



Development Methods

- **Calibration:** Identify *parameters* and adjust them across *experiments*.
- **Verification:** Compare model behavior to the real world or to the opinions of others.



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“An essential element of development is one or more test exercise(s) ... to assess whether the wargame systems integrate [and] to ensure they are fit for purpose.”

– MODUK *Wargaming Handbook*, pages 56-57.



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Parameter—*a numerical or other measurable factor forming one of a set that defines a system or sets the conditions of its operation.*



Rules

- A. Only whenever tapped, immediately tap **3** other people; not whoever last tapped you and not someone who is down.
- B. Once tapped **2** times, tap exactly **1** other (otherwise following rule A), then immediately be seated, hands down.

Rules – Epidemic Model and Parameters

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Virulence: **3**

Lethality: **1/2**

Incubation: **1**

Purpose:

Compare potential
measures to
fight epidemics

Rules – Epidemic Model and Parameters

- A. Only whenever tapped, immediately tap _ other people; not whoever last tapped you and not someone who is down.
- B. Once tapped _ times, tap exactly _ other (otherwise following rule A), then immediately be seated, hands down.



Virulence: _

Lethality: 1/_

Incubation: _

Purpose:

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Implications for Wargame Development

- Define “interesting” – what range of **outputs** suit your model’s purposes?
- Identify your model’s key **parameters** to be tuned.
- As needed and able, run **experiments** to calibrate *separate from* sessions to be validated.



Pro Tip:

[Bracket the target]