1,000 BILLION DOLLARS

User Manual

Essen 1807–1933 · A business and family dynasty across three campaigns

I · HISTORICAL BACKGROUND

A family on the threshold of industry

The campaign begins in 1807 around Essen and Werden. Napoleonic rule, the Continental System, a new administration and uncertain trading routes affect trade, credit and everyday life. Small workshops, hauling businesses and trading houses do not become an industrial group overnight. Capital is scarce, knowledge rests with people and relationships, receivables can be lost, and illness or family conflict reduces the ability to act.

This period includes early steam-engine and foundry projects, Friedrich Krupp's efforts to establish a cast-steel factory, political change, food shortages and the gradual development of the Ruhr region. Your entirely fictional family takes part in these changes: it must live, work, make decisions and pass responsibility to the next generation. Choose its surname when starting a new game.

> **The idea:** History is more than scenery. Prices, opportunities, transport routes, legal risks, knowledge and family life together shape the company's possibilities.

II · HOW THE SIMULATION WORKS

Historical constraints, freedom to act

Documented historical circumstances set the boundaries; within them, the player and independent actors shape events. The game is neither a fixed retelling nor an unrestricted, ahistorical sandbox.

Historically fixed

Changes of rule, wars, restrictions, technological possibilities and documented events in real people's lives. A historical fixed point occurs even when your family takes a different course.

Independent actors

Real and fictional actors pursue their own interests. Relationships, markets and competition affect the family's options. Historical figures are not controllable family members.

Your decisions

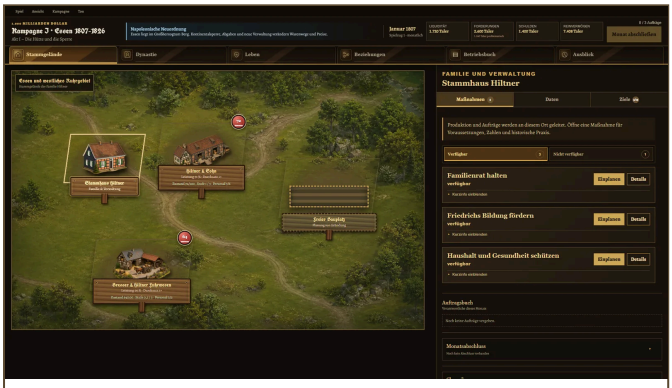
Investment, family roles, business activities, risks and alliances. Several developments consistent with the historical setting are possible.

Historical event windows identify the fixed historical fact. Your choice changes the family's situation, not a real person's documented biography. Family-history events describe variable circumstances invented for the simulation.

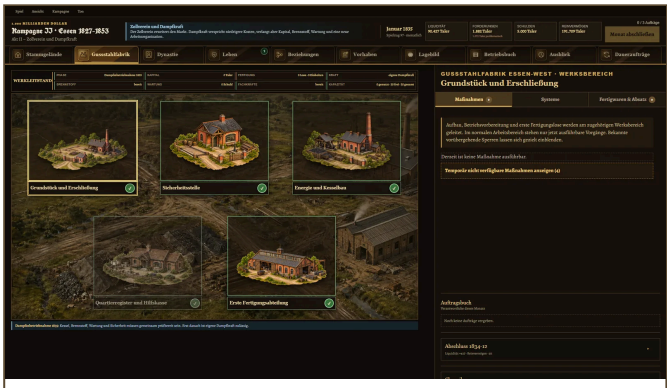
III · THE PERIOD IN PICTURES

From workshop to industrial dynasty

Ten period illustrations show the journey from 1807 to the historical endpoint on 30 January 1933. Their values, decisions and interfaces come from an earlier example game. They are neither targets for your own game nor a current guide to the controls.



1807 · Setting out: Trade, transportation and the workshop begin on a small site.



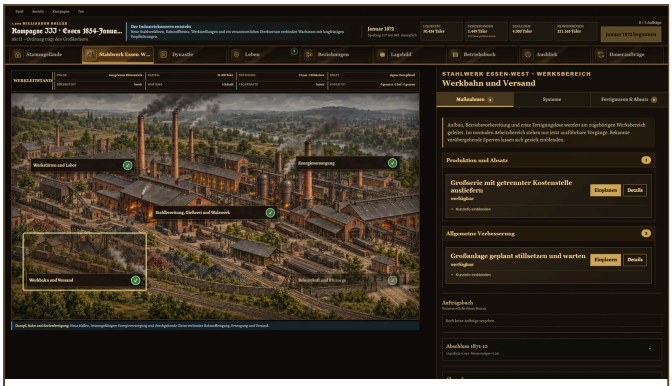
1835 · Building the cast-steel factory: Experimental production becomes a separate industrial site.



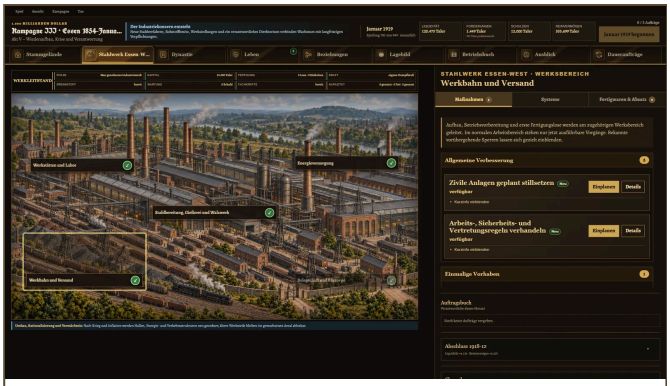
1826 · The first legacy: Knowledge, relationships and succession matter alongside wealth.



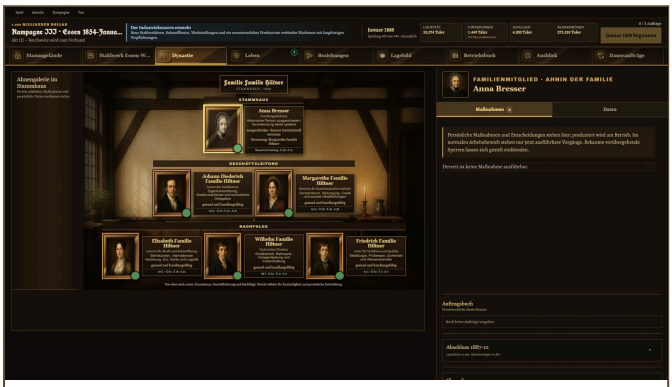
1854 · An industrial group: The third campaign carries the dynasty and company forward without a restart.



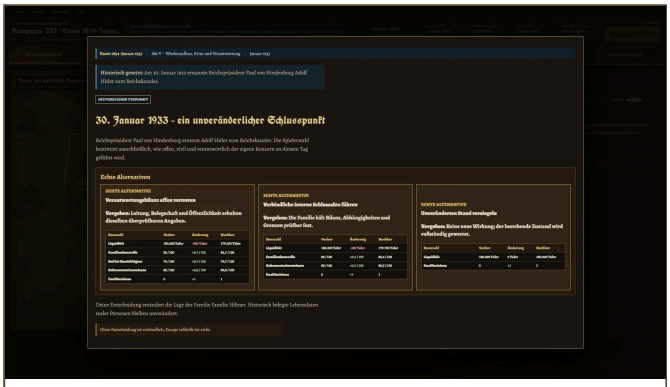
1872 · Organisation supports scale: Technology, capital and leadership must grow together.



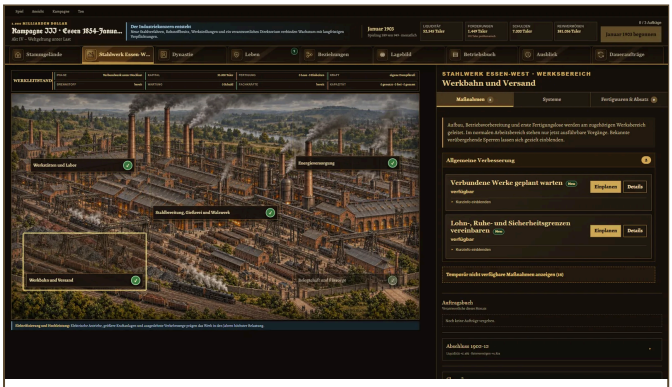
1919 · War and reorganisation: The family adapts the company to changed conditions.



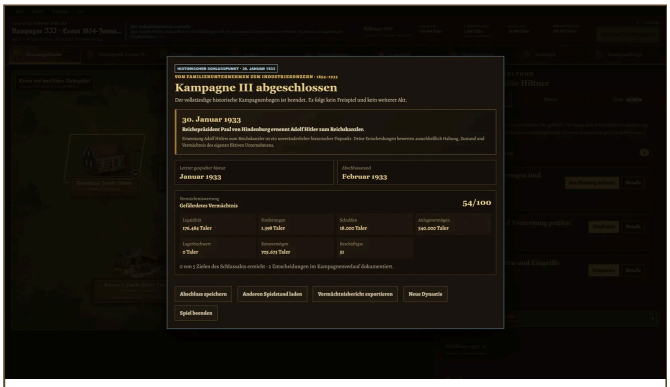
1888 · Reach becomes a network: New generations take responsibility.



30 January 1933 · The historical endpoint: The game deliberately ends at a political turning point.



1903 · Technology becomes a system: Individual businesses have grown into an interconnected group.



1933 · Taking stock: The journey is assessed across several dimensions.

IV · THE BASIC CYCLE

One turn is one month

After setting up the family, **Continental blockade and new order** opens first. Read the choices and their immediate effects, then confirm a decision. Planning on the estate begins afterwards. The quick start demonstrates this opening with **Find legal replacement markets**.

1. **Review the situation:** Check businesses, family, cash, receivables, debt and outstanding decisions.
2. **Select an object:** Choose a building, plot or person on the left. On the right, **Actions** shows what you can do. Expand **Temporarily unavailable actions** to read the specific reason for a block.
3. **Plan:** Check costs, quantities and expected effects. Manual monthly orders, market orders and operating plans are different types of instruction; see stock, orders and freight.
4. **Check the order book:** Switch to **Order book** on the right. Review carried-over orders too, and remove or pause anything you do not want executed this month. Changing views does not schedule an order.
5. **Finish the month:** Select **Finish month** to process orders, running costs, interest, wear and possible risks. Resolve any outstanding mandatory decision first.
6. **Read the report:** Check cash movements, results and skipped orders. After decisions and closing dialogs are resolved, the regular new month starts at **Locations → Founding grounds**. The last monthly template is checked again and carried forward as an editable proposal. Review the outcome in the order book.

Campaigns follow the calendar. Closing December 1826 leads to January 1827; closing December 1853 leads to January 1854. Regular monthly closings continue through January 1933 inclusive. The final calendar display can show February 1933. Completing goals does not replace these monthly closings. See campaigns and saved games.

Acts continue within the same saved game. An act is a chapter, not a separate campaign. Cash, businesses, stock, receivables, knowledge, relationships and family values are retained. At the year-end transition into a new act, a chapter screen records goals and the economic position; confirm it before continuing monthly planning. Achieved act goals remain recorded even if a fluctuating value later falls. The goals view also contains a collapsible archive of completed acts.

Fixed quantities, MAX and the monthly template

For personal monthly orders, **MAX** selects the maximum currently possible once and disables recurring MAX calculation. A manual entry remains a fixed quantity. Only **Recalculate maximum for every monthly template** recalculates the limit when the order is next carried into the monthly template. Check what remains for other orders and running costs.

An **operating plan** has its own recalculation setting: **MAX** first enters the quantity currently possible. It stays fixed unless **Recalculate maximum for every execution** is enabled. With this option, the maximum is recalculated from the resources available at each due run. This is independent of the MAX setting in a personal monthly template. A dynamic plan still needs cash, materials and capacity; a calculated maximum does not guarantee execution.

Pausing for one month

Pause for this month skips the order only in the current calendar month. It makes no bookings and uses no execution capacity. Quantity, MAX settings and material selection are retained, including through saving and loading. Removing the pause before month end checks availability again.

Next month, the personal action is checked through the normal template. An operating plan also keeps its own schedule; one-off operating commands remain planned until their next execution. This guarantees neither execution nor an extra scheduled run. A **permanent operating-plan pause** ends only when you resume the plan. A common permanent pause for all recurring manual actions is not part of this version.

Personal or operational: A personally assigned monthly order occupies that person. Several permitted departmental orders led by the same person can run in the same month. A personal order also conflicts with that person's personally led departmental work. The number of entries in the order book therefore does not imply a general limit of one business order per person. See family and availability.

Monthly notices and your own decisions

The April 1827 review, the 1828 payment-terms review and the 1829 warranty review appear in the **monthly report** with the relevant follow-up action. Read the next step there and carry out the required action separately.

The notices in **July 1925** and **July 1932** provide historical context. In **January 1927**, departmental cover appears as an operational notice. These three notices retain their dates and act evidence, but do not take out loans, pay out cash or reassign department heads. Financing and the final choice remain separate decisions.



Choosing the quantity for a monthly order

V · CONTROLS

Main views and the context panel

After the opening decision, find the illustrated trading house under **Locations → Founding grounds → Location**. Its sign carries the business name, such as **Documentation & son**. Select the building and then **Actions** on the right. **Family home** opens the family residence instead. Freight actions belong to the transportation business; workshop preparation belongs to the free workshop plot.

Finding preparation and responsibility

Action details and investment steps identify missing preparation, location and the responsible person. A navigation link helps you find the right place; it does not schedule anything. Events remain tied to their date. Expand **Temporarily unavailable actions** and read the reason on the entry, such as missing cash, staff or an unfinished prerequisite.

A portrait also shows the person's business responsibilities, such as Margarethe's books. Business actions remain at the building. Follow goals and preparation under **Company → Development tree**: choose a campaign and goal path, then open **Goal details**. It shows **Current → Target** requirements, the next step,

predecessors and subsequent goals. Follow an unmet requirement to find the relevant action, location and responsible person. Previewing later campaigns does not remove their date or technical requirements.

Freight and tool orders in Campaign II allow quantity selection. Quantity determines materials and output; personal workload depends on the type of action performed. See orders, stock and freight for reservations and execution order. Scheduling an operating plan does not guarantee a reservation of your own freight capacity.

▶ Campaign I: Workshop, capacity and founding goals

Workshop: At the free building site, first select **Plan to set up a workshop**. This requires metallurgy knowledge 7 and 90 thalers. The planning task must be processed at a monthly closing. **Establish a metal workshop** requires an inactive workshop, completed planning and at least 500 thalers in cash. Follow-up orders become available at the new business only after founding succeeds at month end.

Transportation: The base level and paid capacity extensions are different measures. The building sign shows technical capacity and actual usable throughput. Staff, condition, training and illness explain differences. **Development & projects** separates completed expansion from the next offer.

Projects: Under **Company → Development tree**, Essen-West has its own works plan from the experimental works to the first booked batch. At the experimental works, **Open works plan** leads there. Individual projects also appear alongside goals that require them. Early capital buildings and investments remain in **finance**, and the strategic investment sequence in **Monthly planning**. Completed projects remain in the history view of the **Business ledger**. See projects and investments.

Elisabeth's authority: Goal guidance points to Margarethe's family council at the family home. It shows the actual preview, including the cap, rather than a blanket reward. The link only opens the action.

Founding goals: Five paths with three stages each make 15 milestones. A result of 13/15 can mean four completed paths and dynasty at 1/3. New requirements belong to the next stage, not to a new act. Assessment uses the current game state. Act I (1807–1810) uses these paths instead of separate act goals. Act II starts in January 1811 after month closing and its announcement, not upon reaching 15/15. Completed stages remain visible as evidence in the works plan.

Succession, inheritance and generations: During the handover period, the family can prepare an adult successor. This transfers neither ownership nor leadership by itself. Death or a voluntary handover triggers a separate settlement. Consolidation, a family settlement and phased arrangements have different costs and affect control, cohesion, morale and authority. Actual dynasty leadership and relevant departmental authority transfer only after that decision. Grief, care, memories and completed generational changes remain in biographies and the chronicle. Adoption and permanent guardianship are full succession routes.

Review actions: The card shows the action, responsible person, main cost or capacity requirement and up to four changes. **Details** provides prerequisites, risks and before–change–after values; background information explains the context. A blocked action remains explainable but cannot be scheduled. On narrow screens, the side panel can be closed.

Prerequisites and decisions use meaningful names. Missing preparation leads to the relevant action or identifies the event involved; a link does not perform it. Details also show decisions and evidence as state changes. The monthly report uses the values actually recorded then, not a fresh forecast. An achieved act goal stays achieved. If its current value changes, the value recorded at completion and today's value are shown separately. Yes/no goals are simply pending or completed. Historical information that can no longer be assigned is marked neutrally, not reconstructed.

Mandatory decisions: Event and act-transition windows show the campaign, current act and month. Wide three-way decisions use a comparison layout, reducing from three columns to two and then one on

smaller screens. Escape does not close a mandatory transition; the dialog explains this and keeps keyboard focus inside the decision.

Main tabs: Monthly planning, Company, Locations, Dynasty, Outlook, Business ledger and Situation. The second tab row divides the selected section. Under **Locations**, select the site and then, for example, **Stock & sales**, **Market & orders** or **Orders & routines**. The locations view under **Company**, by contrast, shows the Ruhr map and available sites.

Right-hand context panel: Order book shows your plan; **Actions** shows actions for the selected object. Additional tabs depend on the selection: a trading house can also show **Warehouse & Sales** and the receivables tab labelled **demands**. The unbuilt workshop plot has only **Order book** and **Actions**. A bare site with no business selected has **Order book** and **Location**. There is therefore no fixed total of three context tabs. Changing a location or tab adds no orders.

Filter the order book: Choose **All**, **Locations**, **Group** or **Dynasty**; Locations also allows filtering by site. The display order does not change execution priority. A transfer can appear at both its source and destination but executes only once.

Target and executable quantities: The target is the quantity you want the order to handle. The executable quantity takes account of resources currently available and earlier commitments. If they differ, check the stated reason; without permission for partial quantities, a fixed quantity that cannot run in full is not simply reduced. A blocked sales routine remains visible in the order book. **Pause for this month** expires at the month change; a permanent pause remains until you explicitly resume the plan.

Monthly planning: Schedule actions directly, open details or go to the business. Existing orders and quantities are the same through every access route. Result previews and bottleneck checks cover all locations. After a regular month change, the view starts at **Locations → Founding grounds**; review the newly checked template in the **Order book**. Free people do not need an order when no useful task is available.

Read the effects: Changed values appear first; unchanged values are collapsible. Evidence shows current and target values. Static explanations and older chronicle years start collapsed. Check the displayed status of completed offers and temporary blocks.

Separate trade and logistics: From 1844, with transportation level 2, you can establish a separate logistics department for 3,000 thalers. Then explicitly appoint another suitable adult through the leadership and cover view in Life. Until then, one person heads both departments. This adds neither business throughput nor freight capacity. Suitability and documented familiarisation are guidance, not hidden penalties or waiting periods.

Contracts: Automatically blocked contracts appear first and expanded; executable and manually paused groups are collapsed. The reason identifies required and available capacity. Hired freight uses none of your own freight slots, but still requires the trading house's throughput or the factory's location capacity.

Life shows development and consequences: Each person's card gives life stage, health, experience, authority, current responsibility and changes actually booked in the last monthly closing. Green, yellow and red show health. The household summary brings together supplies, housing, care, rest, morale and cohesion. Upcoming historical life events disclose only known dates and people; unknown details, options and outcomes stay hidden until the event.

Qualified operational support: Under **Locations → Staff & qualifications**, an existing employee can train as a foreman. This requires an active business with at least two employees. Training takes six active monthly closings and a one-off 190 thalers in Campaigns I/II or 1,200 real accounting units from Campaign III. Pauses retain progress. From the month after completion, the enabled support function costs 12 or 60 per month respectively, even without a personal order. You can pause it to save money. Staff or cash

shortages suspend it without creating debt; normal employment and wages remain. When a personal technical-management action is actually performed, it halves the work-stress component from +3 to +1.5 and the health workload from −0.12 to −0.06. Other burdens remain. The function follows technical management but creates neither a new family member nor an extra action slot. Progress and pauses survive campaign transitions; the new company stage's allowance then applies. The terms of the relevant phase or saved offer apply.

Save format 20 added business training. Older saves start without training while retaining money, workforce and earlier decisions. Already open workshop decisions remain resolvable.

The family develops: Partnerships, family planning, birth or permanent guardianship, childhood, education and taking departmental responsibility appear under **Dynasty → Life**. New people have biographies and age-dependent portraits from the start. You can choose long-term priorities for care, education and succession there. Resolve an outstanding life decision before the next monthly closing. Otherwise permitted operational planning, construction and financial commands remain possible; insufficient cash, mandatory historical decisions and an ended game remain genuine blocks.

Businesses are the main place for production and orders. Plan trade at the office, freight at the transport yard, metalwork at the workshop and crucible steel at the waterside site. General and specialist actions appear together, each with the actual responsible person. When the next generation takes over a department, its existing actions are assigned to them. Portraits and **Dynasty → Life** cover personal circumstances, actions and decisions.

Check availability: For a blocked action, expand **Temporarily unavailable actions**. The entry gives its specific reason. This applies to blocked hiring too: a vacant workplace alone does not prove that cash, responsibility and every other condition are satisfied.

AREA	PURPOSE
Header	Date, cash, receivables, debt, net worth and the number of assigned orders.
Founding grounds and factory	Select buildings and works areas; read performance, condition, expansion and staff. The factory tab appears when the location is reached and later develops into the steelworks.
Dynasty	Framed family portraits arranged by generation. Select one to open the person's actions and details.
Life	Review life stage, health, experience, education, bonds, responsibility, the last month's changes and personal actions for existing and newly added people.
Relationship network	Connects partners, specialists, industry and authorities to the dynasty. Line colour, value and monthly change show relationship strength and recent development; selecting a relationship opens relevant actions.
Development tree	Under Company, choose a campaign and goal path, open Goal details, and review current/target values and unmet preparation. Essen-West and the three strategies have their own works-plan routes. Early capital buildings and investments remain in finance; the strategic investment sequence is in Monthly planning.
Orders & routines	Manage recurring operating plans and agreements. Check quantity, schedule and priority; choose a delivery method only where the activity offers it. Distinguish a block from your own pause.
Market & orders	Serve additional changing demand. Select quantity and delivery method: your own vehicles, customer collection or a hired carrier.
Right-hand context panel	Order book and Actions, with additional object-specific tabs. The unbuilt workshop plot has only these two; a trading house may also show Warehouse & Sales and demands. A bare site has its site data under Location.
Order book	On the right, check, filter, change, pause or remove planned orders. Distinguish target quantity, executable quantity and blocking reason. Blocked sales routines stay visible; filters do not change execution order.
Monthly closing	Changes and running costs; initially collapsed.

AREA	PURPOSE
Chronicle	Historical circumstances, family decisions, costs and realised risks; initially collapsed.

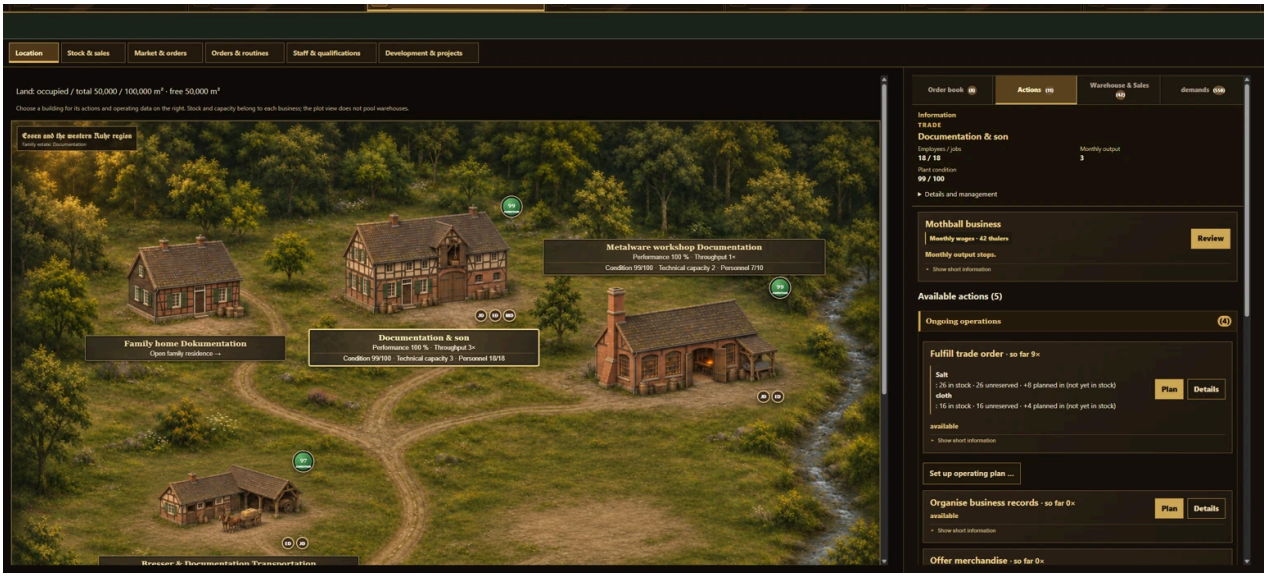
Reach main views through the large tabs or the **View** menu. The active view is highlighted. Long content remains accessible by scrolling in smaller windows.

The main menu also provides restart, saved games, historical background, the manual and sound. Background music is stored locally and does not require the internet. It changes between terrain music, a quieter personal theme when opening a family member and the Egmont Overture for events or campaign endings. The sound menu shows the intended current track.

Confirm training: Under **Dynasty → Life → Wilhelm → Technical apprenticeship**, the choice is immediately confirmed as a life decision. It does not appear as a new ordinary monthly order in the order book.

Opening the manual and returning to your game

Open **Campaign → User manual**. If you opened the manual from a running game, close only the manual tab or its separate window afterwards. Your game remains in the original tab or game window; switch back to it if necessary. Do not open the game start page or dynasty setup again. A manual opened independently does not connect to a running game.



Businesses on the founding estate



Order book and actions at the workshop plot

VI · VALUES AND SCALES

What “58” and “minimum target 45” mean

> **Important:** “Unity: 58 (minimum target 45)” means a current value of 58 on a scale of 0 to 100, with a target threshold of 45.

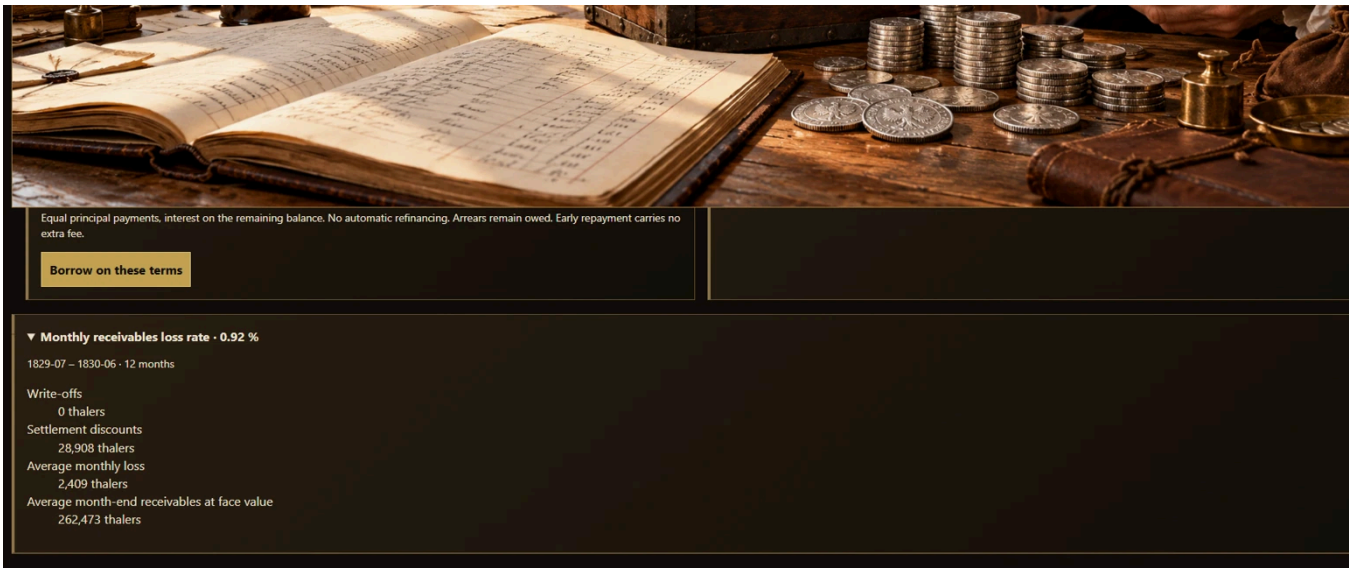
DISPLAY	MEANING
71 / 100	A current value of 71 on an actual scale of 0 to 100.
Minimum target 45	The value can be higher; the requirement is met from 45 upwards.
Maximum 2,200	The value must not exceed this limit.
3 / 6 employees	Current staff relative to this business's staffing limit.
70 → 100 (+30)	A forecast immediately before and after the selected action. The brackets show the difference; subsequent monthly effects may change it again.

Health, experience, authority, family unity, morale, supplies, control, reputation, relationships and business condition use 0 to 100. Repeated actions or older saves cannot produce higher current values: monthly closing and loading constrain these values to their actual scale. Cash, stock, employee numbers and expansion levels are explicitly labelled.

A forecast difference shows the change, for example **(+3)** rather than (+3/100). Green and red judge the effect, not just the sign: falling debt or risk is green; rising debt or risk is red. Changes in holdings, such as more materials or staff, use neutral gold because their value depends on the situation.

Cash is not profit: Monthly closing separates the cash change, earned result and funds tied up in stock. A loan payout is not profit. **Monthly receivables loss rate** under **Company → Finance** measures write-offs and settlement discounts against nominal month-end balances over the same window of at most twelve

closings. Processing fees are expenses, not receivables losses. There is no rate without a measurable balance. This measure is not internal default risk; see receivables and losses.



Receivables loss rate in company finances

VII · BUSINESS

Businesses, staff and performance

Each active business has capacity, condition and employees. Expansion costs cash and creates capacity and workplaces; new workplaces are staffed separately. The building sign and business details show the actual values.

The round condition indicator is **green** at 90–100, **yellow** at 75–89 and **red** below 75. Its number and hover information give the exact condition.

> **Distinguish capacity:** Technical capacity describes the installed facilities and extensions. Usable performance takes account of current condition, staff, training and illness. Free capacity is what remains after the orders taken into account. A vacant workplace is not a free freight slot.

Scheduled debt repayment also offers quantity selection. A single management order can repay any chosen amount up to the entire remaining debt. The default pays the largest appropriate amount while keeping a cash reserve of 400 thalers. Moving cash into debt reduction does not create profit.

Understaffing, wear or illness can reduce usable performance. Paid extensions and training must be considered separately. Use the current preview rather than a calculation based only on the base expansion level. The selected order quantity determines material use and output.

Shared monthly capacity in Campaign II

Capacity-bound actions identify the business, mode and required resources on their card. An action using the whole monthly throughput occupies that business's entire current throughput; fixed units scale with the selected quantity. Once planned, the business shows total, manually planned, automatically due and remaining free capacity. Only agreements actually due this month count; a later due date does not reserve capacity yet.

Execution order: Due contracts and personal monthly orders are considered before additional market orders and ordinary operating plans. You set the order of the plans. Scheduling a plan alone does not guarantee a reservation of your own freight. Actual stock, prior commitments and the current executability check determine what is possible. Fixed quantities execute in full unless you explicitly allow partial quantities. Checking makes no bookings.

The shared freight plan separates **own freight already committed** from the **expected demand** of further orders. It shows which transport capacity is occupied and which the planned work is expected to need. A demand forecast is not an additional reservation.

For recurring quantities, distinguish the one-off **MAX**, recalculation in a **personal monthly template** and recalculation at each **due operating-plan run**. The two automatic settings are enabled separately; see fixed quantities, MAX and the monthly template.

Expansion, staff and maintenance

Development & projects separates paid extensions from the next expansion step. Read its costs, construction time, capacity and additional workplaces. After completion, hire staff for new workplaces as needed.

At ordinary businesses with the relevant storage areas, the **production facility, input store and finished-goods store can be expanded alongside one another**. Each construction job needs its own available team, space and down payment. Different size options for the same business component are alternatives, not parallel construction jobs. Founding projects and Essen-West have their own requirements and construction sequences.

Use **Maintain facilities** to choose the target condition for the business. Check the cost and selected business before confirming. Use and ageing may lower condition afterwards, and illness can further reduce usable performance.

For the trading house, transportation business and founding workshop, monthly wages are rounded separately for each business: employees × wage coefficient ÷ 3. The coefficients in this model are trade 7, transportation 8 and workshop 10. Do not apply this base calculation indiscriminately to industrial units; use their displayed business data, staffing and additional services.

Hiring and dismissal use the displayed quantity limits. If only one unit is possible, the action may be scheduled directly. The maximum considers cash and staffing limits; dismissals preserve minimum staffing. A possible maximum is not a recommendation. See fixed quantities and MAX. Older saves with the formerly possible overstaffing of 6/5 are corrected once to 5/5 when loaded.

Personal workload: It is applied once per action actually performed, according to that action's type, not for every item produced. The actual department head matters, not permanently Wilhelm. Workshop orders, maintenance and expansion also develop mechanical knowledge. Care remains important independently of these tasks.

Trading stock and workshop materials

The trading house holds salt and cloth; the founding workshop has its own semi-finished materials and coal. The experimental works and other businesses have separate stocks. The quantity control shows requirements, available stock and the shortfall. The standard founding-workshop recipe uses 0.2 t of semi-finished material and 0.1 t of coal per tool order. Buy once for the month or through a recurring purchasing plan; there is no hidden automatic purchasing to meet demand.

A bundle is not a single product: Fulfill trade order requires **2 units of salt + 1 unit of cloth** per order. Quantity 2 therefore needs 4 salt and 2 cloth. Bundled goods procurement likewise prepares supplies for trade orders. An individual market offer for salt or cloth instead counts units of that product alone. Purchasing adds stock; a sales order consumes it. Compare proceeds and freight for the same goods quantities, not merely the same number in a quantity field.

Manufacture and deliver a customer order combines production and delivery. **Produce tools for stock** creates inventory without a sale. You can sell that inventory later. Purchasing, production and sales plans can use the same monthly closing in an appropriate sequence. Each route needs its materials, production capacity and transport.

Net worth and running commitments

Stock value = recorded purchase and production costs of the goods held, after actual write-downs. Current market prices do not automatically revalue stock.

Prudent receivables value = not yet due + due + 85% of overdue + 45% of at-risk claims

Net worth = cash + prudent receivables value + fixed assets + investment book value + stock value − debt

Running commitments = the wages, administration, upkeep, interest and other due costs shown. Business size, staff, loans and enabled additional services determine the amount.

Measuring sustainable earnings

Profitable month = a positive earned result after the running costs taken into account. Loans, contributions and pure capital transfers do not make a month profitable.

Profit streak = immediately consecutive profitable months

Earning branches = trade, transportation and workshop with at least one fulfilled business order

The change in net worth considers cash, receivables, fixed assets, stock and debt. Debt repayment alone therefore is not profit; an investment is considered together with the asset value created. These counters appear in the sustainable-earnings goal path.

Receivables and payment terms

For orders with payment terms, the preview separates immediate payment from the amount booked as a receivable. Trade and workshop proceeds and their split depend on market price, quantity and performance; there are no fixed payout pairs for these orders. Before performance scaling, the base freight order specifies 120 thalers immediately and 80 on account. In the documented December 1807, a trade plan for two units earned 366.33 thalers: 255.33 paid immediately and 111 on account. This is an example, not a promised return in other months.

The office's receivables book distinguishes claims not yet due, due, overdue and at risk. Monthly closing advances due dates and books normal receipts without a management order. Only overdue or at-risk claims enable **Process problematic claims**. It pursues, negotiates or settles at-risk claims first, then overdue claims.

Receivables risk therefore applies to trade, transportation and the workshop without making every sale require a separate collection command. At-risk claims are valued more cautiously in net worth than fresh invoices.

Payment-default risk is an internal portfolio indicator, not the amount of problematic receivables and not the measured loss rate. **Process problematic claims** reduces it according to the share processed: 0.5 + 7.5 × share, rounded to one decimal place, capped at 8 points and at the remaining risk. Enter the share as a fraction between 0 and 1. The action therefore does not always reduce risk by 3 points.

The separate review of at-risk receivables becomes available from Act II. It requires at least 25 documentation knowledge, 22 experience and 40 thalers of at-risk receivables, and reduces risk by 3 points. Check the currently responsible department head on the action; Friedrich is not a universal access route.

In a loss-free monthly closing, automatic recovery also depends on cash coverage. Well-covered problematic receivables can allow recovery of 5 points even when their share exceeds 40 percent. Portfolio pressure and recovery can both act in the same closing. Read the actual reported change rather than deriving a fixed reduction from the problematic share alone.

Illness does not automatically mean lost staff

Employee count, vacant jobs and usable performance are different measures. In one documented example, staff remained at 120 while illness reduced usable transportation performance from 25 to 24. Expansion creates more workplaces, which are staffed separately. See responsibility and cover when a department head becomes unavailable.

Monthly receivables loss rate

Under **Company → Finance**, **Monthly receivables loss rate** compares average monthly losses with the average nominal month-end receivables balance. Both use the same window of at most twelve consecutive closings. The rate covers the family, including its family company.

Calculation: 100 × (write-offs + settlement discounts during the window) ÷ sum of the nominal month-end balances in that same window. Total losses are therefore not divided by just one month’s balance. Equivalently, use average monthly loss ÷ average month-end balance × 100.

Write-offs and settlement discounts count as losses; processing fees are expenses. An empty reporting period or no measurable receivables balance produces no rate. The internal risk value still affects payment processing; it is not this loss rate. Historical monthly movements are rounded to whole thalers.

The ranking

The ranking compares company values using the same periods and displays how many months are recorded. It is distinct from a single month's cash change.

VII B · TIED-UP CAPITAL

Projects and investments

When a goal requires a particular project, open **Company → Development tree** and its **Goal details**. Choose the campaign and goal path, compare current and target values, and follow the unmet requirement to the relevant action. Early capital buildings and investments remain in **finance**; the strategic investment sequence remains in **Monthly planning**. The figures below describe those specific projects, not ordinary business-construction offers.

Early capital buildings and investments are in the finance view; the strategic investment sequence is in **Monthly planning**. The first older capital opportunities open after the June 1818 direction decision. Each construction stage needs a management order, costs the stated sum and adds a corresponding amount to fixed assets. A pause does not cancel a started project. Completed projects remain in the history view of the **Business ledger**, while active investments remain in finance. Essen-West has the dedicated project route described below.

CAPITAL PROJECT	DURATION	TOTAL CAPITAL	LASTING EFFECT
Goods warehouse and office wing	6 stages	3,000 thalers	+4 staff places, +1 order bundle, +8% trade income
Coach house, stable and repair yard	5 stages	2,400 thalers	+3 staff places, +1 order bundle, 30% less order-related wear
Testing, furnace and tool installation	7 stages	4,550 thalers	+4 staff places, +1 order bundle, +12% income, 25% less wear
Distribution route on the Rhine and Ruhr	5 stages	2,800 thalers	+10% trade income, market reputation and lower receivables risk
Materials yard and covered coal store	8 stages	6,560 thalers	+2 staff places, +1 order bundle, 45 thalers monthly upkeep
Accounts office and central books	6 stages	4,560 thalers	Lower receivables risk, better credit reputation, 35 thalers monthly upkeep
Horse-change and long-distance freight station	7 stages	5,040 thalers	+2 staff places, +1 order bundle, +10% freight income, 40 thalers monthly upkeep
Smelting construction for crucible steel tests	10 stages	12,000 thalers	7,000 thalers asset value; 110 thalers upkeep per active trial/research month, no income of its own yet
Crucible steel test series	7 stages	6,300 thalers	5.6 t of iron/steel semi-finished material and 2.8 t of hard coal in total; a reproducible process rather than series-production profit
Procedural, cost and succession book	6 stages	6,000 thalers	Transferable steelmaking knowledge; once complete, 25 thalers administration per active trial/research month

Act IV: Preparation rather than premature large-scale industry

The early infrastructure projects prepare industrial development: the materials yard, accounts office and long-distance freight station provide supplies, organisation and logistics. The historical development of Krupp's cast-steel factory and its steam programme is distinct from your family's purchases and projects. Completed crucible-steel trials are the prerequisite for your own Essen-West route.

Only one of these three preparatory major projects can be under construction at a time. Completed facilities incur running upkeep. This requires not just an initial payment but sustainable earnings and an available cash reserve. Dinnendahl's foundry of 1821 remains an independent historical business; the family can supply it, learn or remain independent.

Act V: From trading wealth to the crucible-steel venture

From 1824, the existing business group gains a shared purpose. The office finances development, transportation supports reliable procurement, and the metal workshop provides skills and experimental practice. After at least two preparatory Act-IV projects and enough metallurgical and mechanical knowledge, a small smelting building for crucible-steel trials can be built at the waterside plot. The first stage makes progress visible on the terrain. Select the building site to open its actions and data on the right.

The steel venture is not an immediately profitable fourth standard business. Its ten construction stages cost 12,000 thalers and add 7,000 thalers to fixed assets. Scrap, start-up costs and unsuitable equipment explain the difference. **Crucible steel test series** consists of seven trials, each requiring 0.8 t of iron/steel semi-finished material, 0.4 t of hard coal and 900 thalers: **5.6 t of semi-finished material, 2.8 t of hard coal and 6,300 thalers in total**. Six stages of the **Procedural, cost and succession book** follow, costing 6,000 thalers in total.

The completed smelting building costs **110 thalers** upkeep in active trial/research months. The completed process book adds **25 thalers** administration in those active months. The idle experimental works shows no running costs. These amounts therefore do not apply automatically in every calendar month.

> **Distinguish an experimental works from a large factory:** The smelting building and crucible-steel trials first develop a reproducible process, not profitable series production. Krupp's historical development remains separate from your own site development. Essen-West uses the displayed preparation, costs and facility states.

The five Act-V goals require a fully financed smelting building with reserves, seven documented trial series and a response to a quality crisis, productive contributions from all three existing businesses, a completed succession book and a deliberate legacy decision in October 1826. Repeated trading runs alone are not enough, even for a wealthy family.

Why no modern stock exchange?

For this early industrial period, the game uses period-appropriate investments: a **Kux** (mining share), a fixed-term production advance, a private promissory note and a silent partnership. Hoffnungsschacht and Rheinhandelshaus are fictional. Dinnendahl and Krupp remain independent historical entrepreneurs; an investment improves contact with their business environment, not control over their documented development.

Before subscription, the investment book shows principal, prudent book value, periodic settlement, lock-in and possible additional capital obligations. The area stays accessible while commitments run, with individual instruments shown as compact rows. Available or time-critical instruments expand automatically; others can be opened when needed. A Kux may require a **Zubuße**, an additional capital contribution: shareholders can receive distributions but may also have to pay more. Fixed-term instruments return principal automatically at maturity. A Kux can be transferred only after twelve months and at a discount; it is not a freely liquid exchange-traded share.

Your own route to Essen-West

Open **Company → Development tree** and choose the **Essen-West** route. At the experimental works, **Open works plan** leads there too. The works plan shows dependencies up to the first batch; **Goal details** gives the next step and its requirements. Surveying and planning do not yet purchase land.

1. Complete **Smelting construction for crucible steel tests** and **Crucible steel test series**.
2. **Find and survey the Essen-West site**.
3. Complete the **Procedural, cost and succession book** if it is still missing. If it is already finished, proceed to planning.
4. **Draw up the Essen-West steelworks plan**.
5. **Found the first steelworks in Essen-West**: use **Review founding** to review and schedule the purchase. The initial purchase covers **100,000 m² for 60,000 thalers** and is booked at monthly closing.
6. Schedule the following construction stages in sequence. Only the first batch actually booked completes this project.

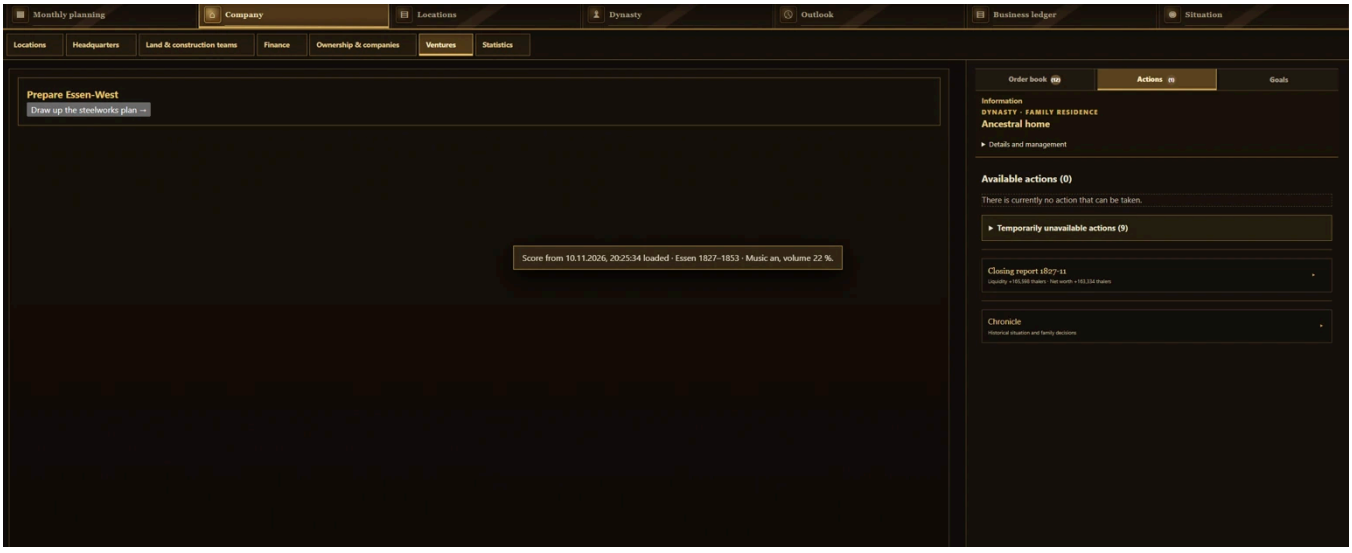
Land acquisition and subsequent construction costs are separate.

After purchase, the works plan shows these eight steps in order:

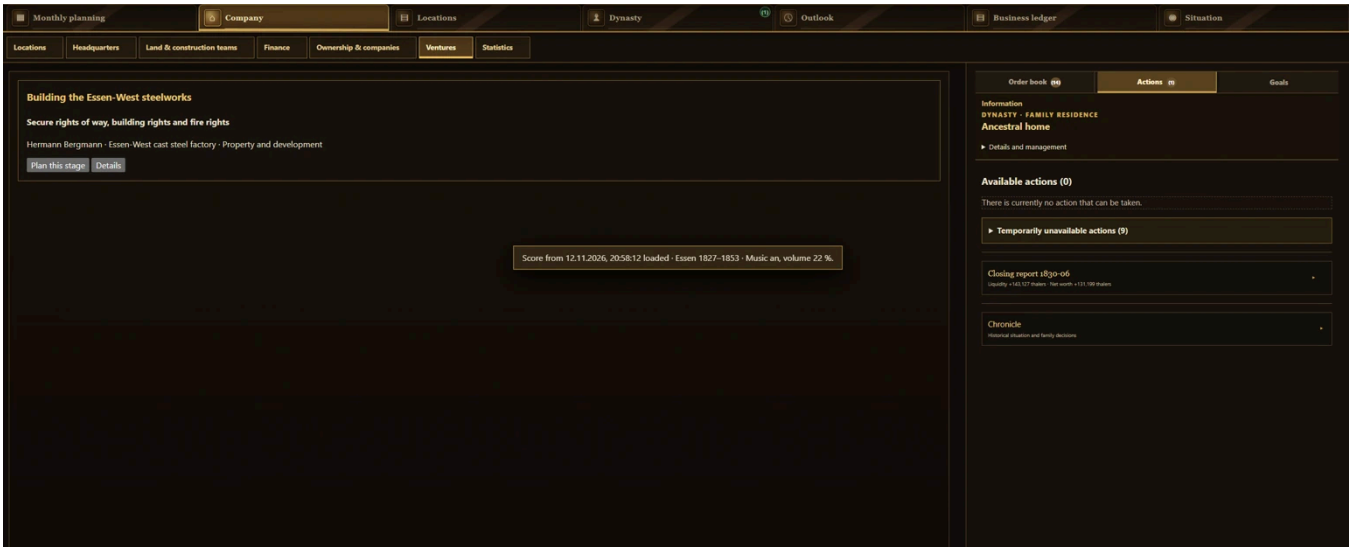
1. **Secure rights of way, building rights and fire rights**
2. **Open up Essen-West**
3. **Plan boiler house and power transmission**
4. **Build boiler house foundations and pipe routes**
5. **Secure fuel samples and delivery windows**
6. **Retain specialists for setup and the first batch**
7. **Introduce maintenance and blocking records**
8. **Produce the first pilot series without its own steam power**

Open the goal details for the next step. For an available action, use **Plan for this month**. The first production run requires materials actually present in the correct business's store. Land already owned and completed systems are not bought again.

Only the first booked batch completes this founding route. Essen-West has its own requirements and development path; unrelated generic business construction is blocked there. Later land extensions are distinct from the first purchase: the special rule allows a total of **up to 1,000,000 m² in ten paid sections including the initial purchase**. The historical steam programme and the later safety office are separate content.



Essen-West before founding



Next construction stage in Essen-West

VII C · STOCK AND ORDERS

Materials, production, stock and sales

Each business owns its own stock. The trading house, founding workshop, experimental works, Essen-West and other businesses do not share goods. The location overview only aggregates them for display. Buy into the consuming business's input store and sell from its output store. Raw-material and finished-goods space are expanded separately. A larger sales store does not create raw-material space. Excess stock and its book value remain; further deliveries require free space.

Three types of order

Manual monthly order: for example, **Fulfill trade order**, scheduled for this month in the order book and checked again through the template. **Operating plan:** an explicitly authorised repetition with quantity, interval and limits. **Individual market order:** a confirmed purchase or sale at the displayed terms; an offer alone is not an order. These three scheduling routes do not by themselves determine whether a person is personally committed. Personal tasks and departmental orders have different commitment rules; see family and availability.

Set up the existing trade order as an operating plan: First remove the personal **Fulfill trade order** from the **Order book**. Select the trading house and then **Actions → Set up operating plan …**. Keep **Fulfill trade order** as the activity. Choose the quantity and limits, then **Review current feasibility** and **Authorise operating plan**. This activity offers **Regional** but no separate delivery-method selection.

Eligible personal market-sales orders have a direct route for conversion into an operating plan. Their existing orders remain until confirmation. Do not apply that procedure to the trade order described above: the trading-goods offers using your own transport, customer collection or a hired carrier are different activities.

1. **Buy raw materials:** Order the required iron and coal quantities. The order shows cost and the responsible person.
2. **Produce for stock:** Select product and quantity. Production uses materials and cash but creates no sales proceeds. New goods are available after the monthly closing.
3. **Choose when to sell:** Hold finished goods or sell existing stock. Price and demand can change; better prices are not guaranteed. Storage ties up assets and incurs upkeep.

4. **Choose freight:** Your own freight uses works transport. Customer collection reduces proceeds; hired freight costs cash. Both leave your own freight free. A free-market industrial stock sale needs neither a second production run nor the old trading-house limit.
5. **Automate the basic operation:** Set up separate recurring production and delivery orders. Quantities and optional stock targets limit overproduction. Plan order matters: purchase before production, production before delivery. An individual market order executes before operating plans and therefore needs existing stock.
6. **Use spare capacity:** Sell additional stock or offer only spare freight to third parties. Freight services do not require your own goods. Existing combined production-and-delivery contracts remain available and still reserve production capacity.

Stock is not cash. Newly produced goods carry the actual average purchase cost of materials consumed and direct manufacturing expenditure. Existing book values are not invented retroactively. Ageing and write-downs remain possible; book value is not a promised selling price. Gross margin means sales, including new receivables, minus variable costs and cost of goods consumed. Production for stock shows manufacturing costs, not sales already earned.

Free market: Each product and sales region has a common offer with quantity, stock source and delivery method. Larger sales reduce the average price; larger fallback purchases increase it. Splitting orders across businesses or delivery methods does not reset that month's price curve. Hired freight and collection need no own freight capacity, but still require the goods and stated costs. Your own delivery needs free freight slots. The preview separates sales proceeds, costs, payments and earnings. New market orders are cash transactions on delivery at month end; existing named framework customers retain their payment terms. Only your confirmation schedules an offer, and you can remove it from monthly planning afterwards.

Compare bundles and individual sales: One trade bundle contains **2 salt + 1 cloth**. For a regional individual sale, the hired-freight component in the base case is **6 thalers per unit of salt or cloth**, or **18 thalers for these three units together**. This is freight cost, not proceeds or profit. Market and location factors can change the cost; a bundled order and individual sales can also have different selling prices. Compare their previews for the same goods quantities.

Released operating plans: routine without another family order

Set up an operating plan through **Orders & routines** or the activity itself. The available fields depend on the activity. Check quantity, market, interval, repetition, priority and the offered cash limits. Stock targets and delivery methods are not present in every form. **Fulfill trade order** has no delivery-method selection. A sales target refers to remaining stock; a purchasing or production target refers to the stock level to fill. Services have no stock. Partial quantities during shortages require explicit permission.

Fixed quantity or dynamic MAX: MAX enters the currently possible value once. Only **Recalculate maximum for every execution** recalculates the quantity from available resources when an operating plan is due. Recalculation in a personal monthly template is a separate setting. Check cash limits and permission for partial quantities even when using dynamic amounts.

Spending limit per run (thalers): blank means no additional spending cap; an explicit 0 prohibits payments. **Minimum cash to keep (thalers)** is a different limit. The quick start leaves the spending limit blank and sets minimum cash to 0. Only available cash is used; the plan does not take out a loan automatically.

Obligations, due legacy contracts and personal monthly orders precede additional market orders; ordinary operating plans follow in their selected order. Missing materials, cash or capacity are not acquired automatically. A plan alone does not guarantee a reservation of your own freight. The last execution shows

quantity and any blocking reason. You can change plans, pause them permanently, resume or end them. Distinguish this from Pause for this month.

Distribute materials between works: Under **Locations → Market & orders**, use the material-transfer function to select source, destination, quantity and transport. Its repeat-as-operating-plan option creates a recurring delivery only by your explicit choice: set a spending limit, check and release it. Goods change storage location at month closing; paid freight increases book value. Internal distribution is neither an external sale nor a second purchase. Stores and company cash accounts stay separate.

Planning production without rewriting quantities

Select the location and open **Orders & routines**. Edit an existing plan or create one. The quantity view shows recipe, requirements, stock and shortfall. Check current executability together with preceding orders, and check again after changing a quantity before releasing it. Purchasing plans remain your responsibility; missing materials are not ordered automatically.

Before investing: Development & projects shows the selected site's production chains and projects. Land, extraction rights and an extraction business are separate purchases. A right identifies the resource, remaining tonnes and the required extraction business. Construction offers show inputs and outputs. The quantity control identifies the actual unit and recipe. For 100 tool orders, the founding workshop needs 20 t of semi-finished material and 10 t of coal. A tool delivery uses one own freight slot regardless of quantity; raw materials are transported by tonne.

Understanding results and goods movements

The planned-sales preview in **Monthly planning** shows revenue, costs and gross margin for each sale. The result calculation then includes other operating entries and running costs. The traffic light is before fixed costs: negative is red, below 50% is yellow, from 50% green; the ratio uses revenue as its base. Central costs are not allocated arbitrarily to sites. Receivables, cash and profit are different measures.

The pre-closing bottleneck check in **Monthly planning** lists expected failures or partial quantities and their actual reasons. Its order link opens the affected plan; checking changes neither quantity nor priority. The shared freight plan separates committed own freight from expected demand for further orders. A blocked sales routine remains visible; check its target quantity, currently executable quantity and blocking reason.

After closing, open the closing report through **Game** and its goods movements by location. Opening stock plus all booked inflows and outflows equals closing stock. Individual movements can be expanded. The saved game retains the latest detailed resource statement. The chronicle, act archives, annual and monthly totals and running contracts remain beyond that. Older detailed statements are not reconstructed from current data.

Wider markets: The supraregional trading network costs 1,500 thalers and takes three months. After that, the foreign office can be built for 8,400 thalers over six months. Both open access for purchases and sales. Wider markets offer more scope, but selected quantity determines price, freight and return. Business expansion alone creates no additional demand.

Choosing staff and maintenance yourself

Staff controls allow hiring up to the physical workplace limit and dismissal above minimum staffing. Each new employee costs 35 thalers to recruit and becomes effective the following month. Dismissal costs 20 thalers per person and trust. Expansion adds workplaces; suitable staffing enables more throughput. Goals do not force this decision.

Maintain facilities restores the chosen target condition up to 100%, as far as available cash permits. It consumes no production or freight capacity. Use and ageing may lower condition afterwards. Business details provide staffing, mothballing and restart. Mothballing does not dismiss employees; retained staff continue to receive wages.

Free people are not unfinished orders

Automatic contracts use no personal monthly order. In Life's personal-assignment view, adults can be committed for several months to training, relationships or family care. Costs are paid at the start; duration and effects are shown beforehand. Cancellation gives no refund. Capable adults who married into the family can also hold responsibility through explicit departmental assignment. Salary is agreed separately, not awarded automatically.

Monthly planning links stock, personal assignments and the family residence with construction progress. To follow a goal to its action, open **Company → Development tree** and the goal details. Scheduling uses the same personal and capacity limits as at the business.

Reading cash correctly

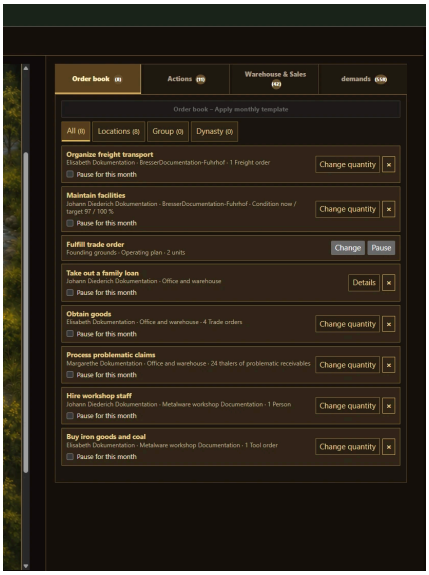
Current cash, planned spending and any additional prerequisite buffer are separate values. Itemised entries name order and person. Portfolio value is already invested wealth, not a monthly reservation. Family salaries and the foreman allowance are running costs. Administration and upkeep grow with actual business size; the breakdown explains the calculation. A reserve warning is not a solvency guarantee.

Delivery method and hauling business

Individual purchases offer a hired carrier or your own works transport; individual sales can also use customer collection. This applies only where the activity offers a delivery-method selection. **Fulfill trade order** has no such selection. **Organize freight transport**, by contrast, sells your own hauling service; it does not purchase outside freight. Compare free company-wide freight, fixed commitments and expected demand for planned work.

The location subtab **Stock & sales** and business context tab **Warehouse & Sales** are different access points. Stock and book values belong to individual businesses. A transfer is not another purchase.

Salt is shown in **units**; semi-finished iron/steel and coal in **tonnes**. A salt unit is not defined as a sack or tonne. A negative return after consuming stock is not the same as a block because delivery and selling costs exceed sales proceeds. Read the preview and blocking reason separately.



Pausing an order for the month

INDUSTRIAL OPERATIONS AT A GLANCE

From purchasing to payment

Purchasing brings materials into the selected business's store. Production for stock creates goods, not revenue. A delivery from stock sells existing goods; a combined customer order manufactures and delivers. Freight must be considered in each case.

For recurring operations, explicitly choose order, quantities, stock targets and cash limits. A plan does not guarantee execution. Compare the result, cash receipts and stock movements in the monthly report.

See stock and orders for the full explanation, supplemented by MAX and pauses, capacity and receivables, and development.

VII D · COMPANY AND FAMILY DEVELOPMENT

Investing capital and choosing your own development

For long-term orientation, open **Company → Development tree**. Choose the campaign and goal path, then open **Goal details**. Compare current and target values; follow an unmet requirement to the necessary project or action. Essen-West and the three strategies have their own works-plan routes. An individual project also appears as a required step where a goal calls for it.

Development & projects shows currently available projects in each campaign. Choose the project and pace yourself. Two project teams allow two normal projects in parallel, or one concentrated project at half the construction time and 50% higher cost. Economical delivery costs 15% less but takes twice as long. Achieved stages remain visible; technical prerequisites and historical availability are stated on the project. The budget is paid in full once per start or expansion stage, not again every month.

The old staged plant-modernisation offer is no longer available for new starts. Already paid stages can still be completed or cancelled after reviewing the refund. Existing benefits remain. Use business expansion for new capacity; training improves the performance of your workforce.

Starting pays the entire budget from uncommitted cash. Due contracts and accepted monthly orders remain protected. Pausing frees project teams. Cancellation refunds 80% of the unused construction costs; the preview gives the amount before confirmation. You can change pace during a project. Acceleration pays only the remaining additional cost and needs free teams; slowing down gives no refund. Completed work is retained. Later acts start collapsed, and historical invention limits still apply. Construction advances at month closing. New capacity takes effect from the month after completion. A project needs no repeated click and uses no personal monthly order.

Financing offers freely chosen bank loans from 1827, showing amount, term, interest, fee and repayment schedule. Loans are not income; unpaid instalments remain debt. Government bonds and railway project investments appear from 1840, mining project investments from 1848. New annual issues of these early fixed-term instruments end in 1871; existing instruments continue unchanged. A portfolio basket occupies commercial leadership once in the monthly plan. Holding and distributions then need no order. Market value is not cash: fees, sale limits, trading blocks and defaults can reduce what is actually available.

From 1854, you can also hold **perpetual shares** in fictional engineering, mining and transport companies. Banking, chemicals and electrical engineering later extend the selection. There is no automatic buyback after five years: you choose when to sell. Dividends vary and may be absent; their amount is deducted from the share price. Later public bonds from 1872 have ten-year terms. Their half-yearly coupon and redemption use the remaining real face value. Each security shows the market phase, your holdings, profit or loss and the quantity actually available to sell.

Historical crises are not guaranteed profit opportunities. The game simplifies war, monetary depreciation and banking crises through prices, defaults, dividends and trading restrictions. Purchasing-power losses affect the designated later nominal bonds, not earlier contracts or business cash retroactively. This is not a complete nominal-inflation simulation. A portfolio value during a trading block is not withdrawable cash. There is neither automatic reinvestment nor automatic borrowing.

The private-assets and loans view under **Dynasty** contains salaries, family lending and repayments, and private heirs. A direct link from the finance view under **Company** leads there. Private accounts do not start with gifted money. Salaries transfer company funds; a family loan from these accounts can transfer only an actual private balance back to the business. Unpaid salary remains a claim. Partnerships offer three adult candidates with different life plans; waiting remains possible. A family residence is an optional private withdrawal with construction time and upkeep, not a necessary goal. Villa Hügel still belongs to the historical Krupp family.

> **Orientation:** An earliest goal-assessment date does not mean there is nothing to do until then. The **Development tree** distinguishes recorded achievements, conditions met today and preparation still outstanding. Later campaigns can be previewed; this does not unlock their steps early. Markets, industrial contracts and your own projects exist beyond simply repeating a monthly template.

The early family loan

Take out a family loan is available from the beginning and is scheduled without choosing an amount or lender. Each execution adds 360 thalers in cash and 410 thalers in debt at month closing. Check the next monthly template to see whether it is scheduled again. This early action is distinct from the loans from private family accounts described above.

Sites and adjoining land

The locations view under **Company** opens the Ruhr map. Land, extraction rights and an extraction business are separate decisions. Showing a port or railway connection on the map does not build it free of charge. A business without its own deposit can process delivered materials.

A site view shows up to four businesses in the scene, with additional businesses as selectable cards below. For ordinary controlled sites, go to **Locations → Location → Buy adjoining land** and schedule the purchase. Each purchase adds 20,000 m², up to a maximum of 500,000 m².

Prices per 100 m² are 25 thalers for land, 40 by a railway corridor and 60 by water. Acquired sites without a specified land type use the land price. The owning company pays at month closing from available cash and its approved budget. The purchase raises area and land book value, but creates no new location, deposit or right. The founding grounds and Essen-West have their own rules; see Essen-West.

More performance through expansion and training

The corresponding business expansions have base offers of **25%, 50% or 100%**, normally over **6, 9 or 12 months**. New plots and businesses have their own offers, costs, capacities and workplaces; there is no universal new-works offer with fixed values from 1888. Hire new staff separately; they become effective the following month. The preview states staffing needs, recruitment cost and additional monthly cost. Fixed assets alone do not produce output. Stock space and works transport are expanded separately; existing contract quantities remain unchanged until you alter them.

At ordinary businesses with the relevant storage areas, the **production facility, input store and finished-goods store can be expanded alongside one another**. Each construction job needs its own available team, space and down payment. Different size options for the same business component are alternatives, not parallel construction jobs. Founding projects and Essen-West have their own requirements and construction sequences.

Business training develops virtual master workers, foremen and dispatch staff, not extra playable characters. Level 1 takes six months, costs three monthly payrolls and raises base performance by 10%; level 2 takes a further twelve months, costs six payrolls and raises it by 25% in total. The bonus is proportional to trained staff, with at least one unit at full coverage and staffing. New hires may need further training. The running allowance is 5% or 10% of the wages covered; an earlier foreman allowance is credited. No budget or a paused support function means no bonus.

Personal training offers technical, commercial and social leadership courses to capable adults in the family line. Marriage alone does not qualify someone for these courses; an otherwise permitted departmental assignment is independent of this. A relevant completed course and suitability of at least 60 allow voluntary mentoring of a business course at a 20% discount. The mentor remains committed; illness pauses training. External continuation costs only the remaining discount amount. Training creates no extra personal monthly orders.

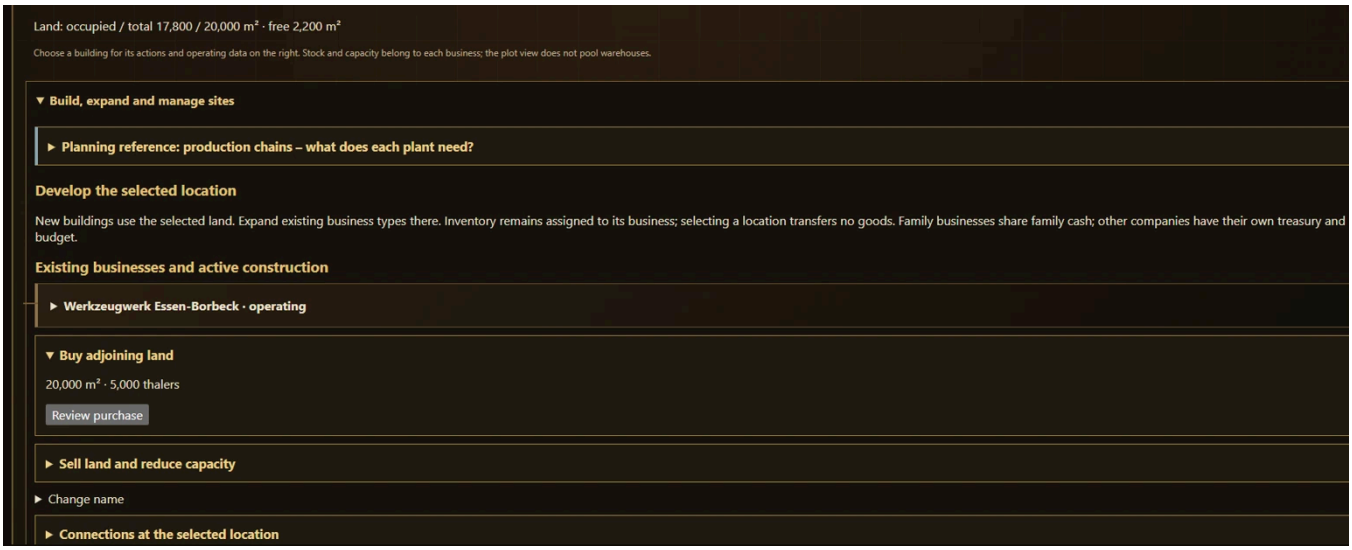
Hospital: Ordinary staff can also be absent through illness. This reduces usable output and appears in planning and closing. In the model described here, a works hospital reduces the absence rate by **60 percent** and costs **30 thalers plus 0.75 thalers per employee covered there** each month. Lost whole capacity units are rounded. The facility creates no extra technical capacity; the monthly report gives units actually lost and avoided.

1846–1848: The economic crisis limits new market orders and delays customer payments. The monthly notice states the current factors. Existing delivery obligations remain, and delayed payments are not written

off solely because of the delay. The event itself does not force bankruptcy. The normal game-failure conditions still apply; a cash reserve helps but does not guarantee success.

Monthly report and profit and loss: Closing shows final cash, the change in wealth and their main causes. Investment redemption is a return of capital, not new revenue. Profit and loss separates the last closed month, current calendar year and all recorded play history. Missing monthly data in older saves is not estimated. Historical notices remain; retired choices that only changed values and new offers of the corresponding projects are absent. Already paid projects can still be completed.

Read comparisons correctly: Earned result, cash change and stock commitments are separate in the report. The ranking uses equal comparison periods and states the months recorded. The receivables loss rate in finance under **Company** is based on a different measure from internal risk; see receivables and losses.



Adjoining land at an existing site

VIII · RELATIONSHIPS

Dynasty, partners, competitors and institutions

Relationships open access to information, credit, orders and knowledge, but can also create dependencies. This overview names the fictional family's surrounding network. Your game state determines which contacts and actions are currently available. Historical people and companies remain independent.

Relatives

Anna Bresser
Margarethe's mother · Ownership and memory
FICTIONAL

Matthias Bresser
Margarethe's brother · Transport partner in Werden
FICTIONAL

Business and knowledge

Caspar Feldhaus
Master craftsman · Metalworking knowledge and employment relations
FICTIONAL

Sara Levi
Trader · Prices, goods and credit contacts
FICTIONAL

Agnes Schulte
Mine administrator · Extraction and safety
FICTIONAL

NAME CHOSEN BY YOU · FICTIONAL

Your dynasty

Family · Businesses · Wealth · Succession

Historical industry

Fried. Krupp
Customer, rival, debtor or knowledge partner
HISTORICALLY INDEPENDENT

Franz Dinnendahl
Steam engines, foundry and mining orders
HISTORICALLY INDEPENDENT

Gute Hoffnung / JHH
Ironworks, skilled staff and competition
HISTORICALLY INDEPENDENT

State and society

Jean-Baptiste Morel
Berg administration · Duties and permits
FICTIONAL

Leutnant von Rüden
Prussian supplies from 1813 · Risky state orders
FICTIONAL

Authorities, creditors, employees
Groups with separate reputation and claims
INSTITUTIONS

ACTOR	RELATIONSHIP TO THE DYNASTY	ROLE IN PLAY	STATUS
Bresser family	Margarethe's family of origin; co-ownership and transport cooperation	Transport, ownership, loyalty and mutual risk	Fictional
Caspar Feldhaus	Master craftsman and possible investor	Technical knowledge in return for wages, profit share and fair treatment	Fictional
Sara Levi	Independent network partner	Procurement, market information and credit contacts; pursues her own interests	Fictional
Fried. Krupp	No family connection; industrial comparison and market relationship	Orders, competition, receivables risk and a historical reflection of succession	Historically independent

ACTOR	RELATIONSHIP TO THE DYNASTY	ROLE IN PLAY	STATUS
Franz Dinnendahl	Technical environment and possible business contact	Mechanical knowledge, transport and mining opportunities	Historically independent
Berg / Prussian administration	Permits, duties and public orders	Legal risk, state reputation, concessions and uncertain claims	Historical setting

> **Independence:** Real people and historical companies are not controllable family members. Relationships change access, offers and information, not documented life events or the fixed historical course.

IX · PEOPLE

Health, experience, authority and availability

The family overview is an ancestral portrait gallery at the family home. Framed portraits arrange grandmother, management and successors by generation. Brass plaques show age, health, experience and authority. Campaign II also shows the person's lasting role and specialist focus. Green means available, yellow committed and red unavailable through health. Business production stays at the building; portraits explain responsibility and provide personal actions and decisions. Detailed data remains in the right-hand context panel as later acts add further attributes.

- **Health:** Below 25, a person is unavailable through health. If Anna falls below this, Margarethe's more expensive, weaker emergency cover becomes available at the family home. It does not heal Anna and uses Margarethe's normal management slot; at exactly 25 it is not needed.
- **Personal availability:** A living, adult and capable person can take at most one personally assigned monthly order. This also blocks their personally led departmental work.
- **Operational responsibility:** Several permitted departmental orders led by the same person can run together. These are not automatically additional personal monthly slots. Holding several departments does not give that person several personal slots either. Check the order type and blocking reason, not just the number of scheduled orders.
- **Experience:** Increases through responsible work and some educational actions.
- **Authority:** Represents influence within the family and business. It is not the same as age or ownership.

Health changes monthly. Age-related baseline wear is 0.03 points below 35, 0.06 from 35, 0.09 from 50 and 0.14 from 65. Personal workload is calculated once for each action actually performed, according to its type, not multiplied by quantity. Unassigned people below 80 health recover 0.06 points when food supply is at least 70. Below 45 supply, deprivation adds a further burden. Age-related wear and monthly workload are separate components.

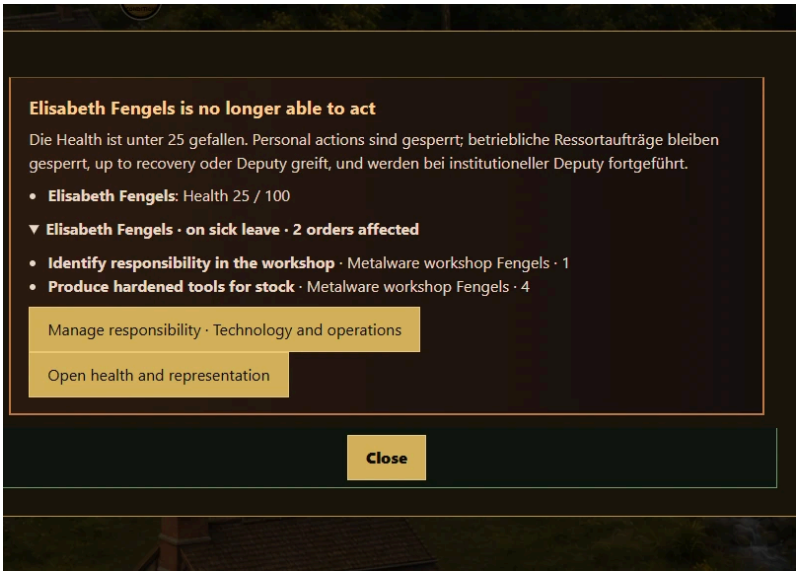
For a committed person, check the specific task and its duration. Personal monthly orders are not the same as longer training or assignments.

Personal orders, departmental orders and operating plans differ in how they occupy people. The quick start's **Fulfill trade order** operating plan does not assign a person during setup or amendment and uses no personal monthly slot for either. Its scheduled runs likewise use no additional personal monthly order. Do not assume that every contract must occupy a person when created or changed.

Department leadership and illness

The action names the actual department head. Personal departmental goals identify both the assessed department and the person whose value counts. Archived goal values use the occupant that can be established for that time. If a handover's timing is ambiguous, the game shows the uncertainty rather than silently assigning an older value to today's head.

If a department head falls ill, both personal orders and operational orders they lead may be affected. The notice names the specific orders, business, person and quantity. For a corresponding technical absence, **Manage responsibility · Technology and operations** opens the responsible department; for other departments, follow the link shown there. After changing an assignment, check the plan in the **Order book**. Quantities, MAX settings and material baskets remain available for another feasibility check. Resumption does not guarantee that every other requirement is met.



Notification when a department head falls ill



Department head and deputy

X · UNCERTAINTY

Risks are visible; outcomes are uncertain

Decisions raise or lower risk values. A risk does not guarantee an event; it changes its probability. The random state is saved with the game, allowing the same saved position to be continued reproducibly. Default, smuggling, major-customer and safety risks are also shown in the relevant business's data.

Monthly probability from a quarterly risk $q = 1 - (1 - q)^{1/3}$

Partial loss of at-risk claims: quarterly risk $q = \min(0.18, \text{default risk} \div 400)$, converted to monthly $1 - (1 - q)^{1/3}$

Paperwork inspection: $q = \text{smuggling risk} \div 180$

Due claims and some overdue claims are paid automatically, depending on creditworthiness and payment risk. Unpaid sums can become overdue and at risk. A random partial default is possible only when at least 50 thalers of at-risk receivables remain; the chronicle and monthly report give amount and consequences. In the stated formula, smuggling risk 18 means about 3.4% monthly inspection risk, and risk 40 about 8%. This risk value does not fall by itself without an appropriate action. These model values are not historical constants.

Events and choices

The choice windows are called events. Read each alternative's described process and immediate effects. Historical fixed points change your family's situation, not real people's documented history. An outstanding family or historical decision blocks the next monthly closing until a choice is made. Double-clicking does not book the same decision twice.

Fictional events appear only when their factual prerequisites hold. The creditors-demand-security event refers to merchants and private lenders behind outstanding family and goods credits, and appears only with at least 300 thalers of remaining debt. Without that debt, the chronicle instead records that no creditor can demand additional security.

Historical freight offers

For the historical 1815 allocation, accepting first schedules an order. Finance and Monthly planning show the same order. After confirmation, its button is disabled. Remove it in the order book to make the still-valid offer available again. The fee is booked once, when the order executes.

The default-risk value in the formula controls probability. It is not the measured rate of booked losses under **Company → Finance → Monthly receivables loss rate**; see receivables and losses for that calculation.

XI · CAMPAIGN PROGRESS

Founding goals and ongoing act goals

Company → Development tree brings together goals and preparation across all three campaigns. It contains **70 act goals**, **44 long-term milestones** and **6 additional phase records**. These totals cover the three campaigns, not the current act. Later campaigns can be previewed.

1. Choose the **campaign** and **goal path**, such as **Founding goals**.

2. Select a goal to open **Goal details** on the right.
3. Under **Requirements · Current → Target**, compare your current position with the requirements.
4. Open an unmet requirement. **Predecessors** and **Leads to** show what is needed first and what follows.
5. Follow it to the relevant action and check location, person, cost and availability. A navigation link performs nothing; **Plan for this month** is an explicit scheduling action.

The **five founding-goal paths** each have three successive stages. Such a path is complete only at its final stage. This is not a general sequence for all act goals. Act goals state their lasting benefit on completion or penalty on non-completion. That consequence is booked once at act closing and recorded in the archive. Earlier goal states are not changed retroactively.

Some act goals are independent of one another. The development tree shows their actual requirements; several goals can be pursued in parallel unless otherwise indicated. Goal details provides status, requirements, timing, the next action and any relevant event. A recorded achievement is distinct from today's values: fulfilling a goal earlier does not mean every value measured then remains unchanged. Newly reached stages are announced; loading a state where one is already complete does not announce it again.

Campaign II has two time horizons: Five goals belong to the current act. Long-term goals form five live-assessed paths with fifteen stages across acts. A path can therefore be currently fulfilled. A goal that can already be prepared allows action now but cannot be fully completed before its stated month. Waiting for an event indicates no direct player action yet. Decisions show pending or completed. A cash floor of zero means it must not become negative. Investment stage 0 to 3 describes the development path actually completed. A link helps locate the relevant action.

The following table is an **overview of the five founding-goal paths and their fifteen stages**, not a complete list of every condition. Knowledge and dynasty requirements in particular are summarised. The goal details give the full thresholds and the responsible people. Books in order is explicitly required for **Broad business knowledge**. Personal requirements use the current department head shown on the card, not an unchanging founder's name.

GOAL PATH	STAGE 1	STAGE 2	STAGE 3
Growing and solid balance sheet	**Solvent** At least 250 thalers cash; debt no more than 2,200 thalers.	**Consolidated** At least 600 thalers cash and 8,000 thalers net worth; debt no more than 1,000 thalers.	**Growing wealth** At least 1,000 thalers cash and 9,500 thalers net worth; debt no more than 500 thalers.
Scaled corporate network	**Two ongoing operations** At least two active businesses and five employees in total.	**Industrial entry** At least three active businesses, three expansion levels in total and nine employees.	**Scaled composite** Trading-house level at least 2, transportation level at least 1, workshop level at least 2 and at least twelve employees.
Sustainable profitability	**First surpluses** At least three profitable months and six fulfilled business orders.	**Reliable operation** At least eight profitable months, a best profit streak of three months, two earning branches and 15 fulfilled business orders.	**Long-term profitability** At least fifteen profitable months, a best profit streak of four months, all three earning branches, three workshop orders and 30 fulfilled business orders.
Knowledge and industrial skills	**Two skills** Two developed core fields.	**Broad business knowledge** Broad knowledge of trade, logistics, metallurgy and documentation; the books must also be in order.	**Industrial competence** Advanced commercial, logistical, metallurgical, mechanical and documented knowledge.

GOAL PATH	STAGE 1	STAGE 2	STAGE 3
Effective dynasty	**Resilient household** Family unity, average health and family control.	**Shared responsibility** Authority of the assigned department head, discussed succession, family unity and control.	**Prepared generation** Authority and experience of the assigned people, plus family unity, food supply, average health and control.

The final stages connect the balance sheet, businesses, earnings, knowledge and family. Individual high personal values cannot replace a viable company.

Act II · The promise of steel, 1811–1813

From January 1811, five new chapter goals appear: **Friedrich takes responsibility**, **Position on the young cast steel factory**, **Warproof liquidity**, **Documented industrial competence** and **Change of rule prepared**. Personal requirements use the actual department head named in the goal details, even where a goal's name mentions a founder. Earlier goals remain in the history; the fifteen founding milestones do not bring the act transition forward.

The goal details explain how to fulfil an act goal. **Change of rule prepared** is deliberately date-bound: the historical fixed point ending Berg's political order appears in **October 1813**. Each of the three plausible answers fulfils preparation but affects cash, relationships and risk differently.

Act III · Peace brings competition, 1814–1818

Peace changes uncertainty rather than removing it. Returning workers, Prussian administration, renewed British industrial imports and the hunger year of 1816 set the historical conditions. The family must compete in an open market, secure official relationships and records, respond socially to the supply crisis, make workshop knowledge independent of individuals and demonstrate its own post-war direction in 1818.

Five new actions support these goals: exploring open markets, keeping Prussian registers, standardising workshop quality, supporting employees' households and documenting workshop procedures. They supplement rather than replace trade, freight, production, maintenance and family work. Seven events occur from March 1814 to June 1818. A quality niche, cost leadership and trading or financial services are genuine strategic directions, not one right and two obviously wrong answers.

Act IV · Committed capital, 1819–1823

Four foundation projects and three preparatory infrastructures turn individual businesses into a reliable asset base. Investments remain period-appropriate Kuxe, advances, promissory notes and silent shares, not a modern exchange. Dinnendahl's historical foundry in 1821, a capital shortage in 1822 and the leadership settlement in 1823 test whether growth, cash and succession can be managed together.

Act V · The inheritance, 1824–1826

The final act brings trade, freight and metalwork together in the crucible-steel venture. Its aim is a reproducible, documented and financeable process, not yet a profitable large factory. Krupp's house sale and financial difficulties in 1824 provide the historical warning; a fictional crucible crisis in 1825 tests the response to scrap; the 1826 legacy decision determines what the next campaign inherits.

Dates, monthly notices and act evidence

The April **1827** review, the **1828** payment-terms review and the **1829** warranty review lead to the relevant follow-up action in the monthly report. Check the goal details for the requirement still outstanding; the notice does not perform the action.

The notices in **July 1925**, **January 1927** and **July 1932** retain their dates and act evidence. July 1925 and July 1932 provide historical context; January 1927 reports on departmental cover. None of these three notices automatically takes out a loan, pays out cash or reassigns staff. Financing and the final choice remain separate decisions.

Legacy assessment

The final assessment separates five dimensions: **financial strength**, **knowledge**, **family and succession**, **relationships and reputation**, and **industrial preparation**. Values from 0 to 100 are assessment points, not caps on wealth, knowledge or growth. 100/100 means that the area's criteria are fully met. Financial strength weights net worth at 40%, cash reserves at 25%, freedom from debt at 20% and profitable months at 15%. A large cash balance therefore cannot hide weak relationships or unresolved succession. The top rank begins at 90 overall points. The assessment is frozen at campaign completion and remains unchanged if free play is chosen afterwards.

Broad and resilient sales

Broad and resilient sales can be assessed no earlier than **January 1837**. It requires **120 fulfilled orders, market reputation 70, investment stage 3** and a measurable **Monthly receivables loss rate of at most 1 percent**. The rate threshold is checked before display rounding. See Monthly receivables loss rate for its basis and location. There is no measurable rate without a recorded period or measurable receivables balance.

Personal goals and awards

A personal goal names the department and current head. An archived value uses the holder that can be established for that time. Experience belongs to the person; changing leadership does not automatically transfer it to the successor.

A trophy appears when a milestone goal is first reached. The large wreath requires all relevant game goals. Reaching the historical endpoint alone is not enough.



Department and person on the objective path

XII · LONG GAMES

Saving and an additional backup

A filename is not a save confirmation. Wait for **SAVED**. Replacing a save requires explicit confirmation; old saves are never removed automatically. Local Windows storage has no fixed count or total-size quota. Its dialog shows used space and the per-file limit. The web default of 100 save slots and its size quotas are separate.

If normal saving is unavailable, **Download additional backup file** provides another route. This regular backup includes the current plan and can be loaded through file selection. Check the file before closing. Starting a download does not confirm a successful backup, so the close warning remains. **Unchecked raw diagnostic data**, by contrast, is not a loadable game. There is no autosave or guaranteed recovery after a crash.

Campaign transitions in 1826/1827 and 1853/1854

After closing December 1826, starting Campaign II and confirming its first act leads to January 1827. It is not a restart. The family, personal values, businesses, staff, expansion, condition, cash, debt, receivables, stock, knowledge, relationships, capital projects and investments carry over. The legacy assessment stays recorded. The new campaign's month counter starts at turn 1.

Framework contracts: Campaign II offers regular material and trading-goods purchasing, delivery of tested gauge blanks, recurring trading sales and condition-dependent workshop maintenance. Cards state quantity, freight method, order, schedule, due date and past runs. Own freight uses capacity; hired transport costs cash. Shortages leave active agreements in place for a new check at their next due date. Scheduled runs need no additional personal monthly slot. A permanent plan pause lasts until resumption; a monthly pause expires with the calendar month without changing the schedule. Cancellation shows the renegotiation date.

Markets and orders: Purchases and sales share regional, supraregional and international markets. Regional access exists from the start. Wider areas open through paid projects, not as calendar gifts. Quantity and price are shown before scheduling. Multiple orders share the same product and market's price curve.

Operational actions are scheduled and executed at monthly closing. Operating plans repeat activities with your quantities and limits. The founding workshop, trading house, transportation and experimental works

remain. Essen-West has separate facilities and stock. Personal life choices such as Wilhelm's technical apprenticeship, by contrast, are confirmed immediately.

Optional events: Occasional historical situations and fictional business circumstances appear in the normal decision window. The dialogue states repeatability, waiting time, maximum occurrences and previous history. An explicitly effect-free rejection closes the notice without an economic booking; the chronicle records the decision. Use the option actually offered: in June of the quick-start route it is **Decline request**; in October it is **Wait without taking any additional action**.

Regular months in 1829–1833: July 1829 through December 1833 is played as 54 ordinary months. There are no consolidation time jumps. Your businesses, purchasing and production plans continue month by month. An act change replaces neither a monthly closing nor the acquisition of industrial land.

Essen-West cast-steel factory: The founding grounds remain. Your own route starts after completed crucible-steel trials and proceeds through site search and survey, completion of the Process, cost and succession book if still missing, planning, paid acquisition and construction to the first produced batch. The initial purchase is not an unspecified partial-land purchase: it is 100,000 m² for 60,000 thalers. See your own route to Essen-West for subsequent steps and later extensions. The site map shows five facility areas with twelve systems. Power, fuel, maintenance, skilled staff and industrial capacity remain separate prerequisites; the early relief fund is not yet a workers' settlement.

Act III · Quality seeks markets: From 1837 to 1843, the simulation separates production, valued finished goods, demand, contracts, delivery and receivables. Production first makes goods; fulfilling an actual contract creates a receivable not yet due. Rework and write-downs handle slow or outdated inventory without fictitious revenue. The **Business ledger** brings together dynasty, businesses and staff, finance, stock and sales, bottlenecks and trends. Its phase plan explains which evidence still prevents movement between the three stages. If a work sequence has fallen behind the calendar, the last matching annual contract becomes available as a catch-up call-off. When goods are missing, guidance leads first to executable production. Newly achieved goals appear compactly without a modal interruption. Act transitions archive achieved, missed and outstanding goals.

Act IV · Ownership in crisis, 1844–1849: Three phases cover ownership and permission to operate, workforce and connections, then crisis and succession. The work sequence identifies missing evidence. The ledger groups ownership and capital commitments, industrial site, workforce/housing/safety, financing/demand and leadership/succession. Three strategy paths remain exclusive. Annual contracts and free markets identify their validity. Confirm the act transition before the next month's planning begins.

Act V · Railways decide, 1850–1853: Three phases cover railway qualification, proof in the market, and legacy and handover. Five goals and 16 quarterly decisions connect capital, materials, quality, markets and responsibility. The ledger covers the railway market, financing, capacity, production, contracts, workforce and succession.

Campaign III · Act I · From family business to industrial group, 1854–1871: Campaign II ends after the December 1853 closing with a fixed assessment and allows transition to Campaign III. The next chapter begins in January 1854 without a restart. Railway series, large-scale processes, material access, workforce responsibilities and group leadership compete for capital and responsible people. Several permitted departmental orders led by the same person can run together. Separately, a personally assigned monthly order occupies that person and conflicts with their personally led departmental work. Holding several departments creates no additional personal slots. Construction uses two separate project teams. Half-yearly decisions connect historical circumstances with the dynasty's own path.

Act II · Organisation supports the group, 1872–1887: The expanded business needs clear responsibilities, sustainable financing and succession that does not depend solely on individual founders. Family and company organisation become one leadership challenge.

Act III · Reach becomes a network, 1888–1902: Material access, works, transport routes and markets become more interconnected. Size alone is not enough; the family must distribute responsibility across sites and generations.

Act IV · Technology becomes a system, 1903–1918: Research, plant construction, maintenance and qualified management must work together permanently. The First World War sets historical conditions that no company decision can remove.

Act V · A company between war and order, 1919–1933: Demobilisation, currency and economic crises, new markets and responsibility for employees shape the last chapter. The game ends at the deliberate historical boundary of 30 January 1933.

The full period: Regular monthly closings run from January 1807 through the January 1827 and January 1854 transitions to January 1933 inclusive. After its closing, the technical calendar can show February 1933; the last played resource statement concerns January. There are no consolidation jumps or June 1829 game stop. Accounts use Prussian thalers through 1875, marks from 1876 at 1 thaler to 3 marks, and Reichsmarks from 1924. The model uses stable real values rather than an explosion of nominal hyperinflation figures. Act changes do not reset the family or company.

Exporting the legacy report downloads a readable account of completion. It is not a save and is not needed to change campaigns. Saving the completion creates a normally loadable game. The next campaign can then be saved and loaded separately.

Distinguish failure from campaign completion

The game-failed message gives the reason after monthly costs. Negative cash alone does not mean failure. A final failure provides no legacy assessment, export, free play or campaign transition. Saving the game and loading another save remain available. Cancel or Escape from that selection returns to the failure dialog. An old completion marker does not override a confirmed failure.

Saved games

The first new-dynasty-or-continuation window offers two equal routes: choose a surname for a new game or load a saved game straight away. Loading does not require choosing a new dynasty name first.

Game → Save game first asks for a name. The default contains surname, year, month and turn, such as **hiltner-1824-01-zug-205**. If it already exists, the game adds **-2**, **-3** and so on. A custom description such as “Before the war” is safely combined with the family name. Replacement requires a separate confirmation; Cancel or Escape writes nothing.

On this computer, saved games are in the local save area. On a web server, each player account has a separate private storage area. Surnames, recovery keys or browser details cannot select someone else's storage. The save list checks origin, game section and completeness before loading. Deletion and replacement require explicit confirmation; parallel changes in another window are not silently overwritten.

A save contains surname, game values, date, decisions, chronicle, random state, plan, contracts, sound settings and the dynasty's life and succession state. Development projects, loans, portfolio, private wealth and residence also remain. For goods movements, exactly the last detailed resource statement is saved. This does not reduce the chronicle, act archives, annual/monthly totals or running contracts to one month. Labels are generated by the current interface after loading.

The game provides its own list for regular saves. Supported older saves are carried forward without rebooking previous income or expenditure. This includes receivables due dates, quantity planning, sound

settings, campaign transitions and multi-generational life and succession. Missing historical performance is not invented. A save from an unknown newer version is rejected rather than risk being loaded incorrectly.

Resolve the decision before saving: At the documented 1807/1808 year change, **An after dark offering** appears. Answer it before saving the new position again. The quick-start route uses **Reject and document**, which does not change cash. Then open **Game → Save game** and wait for **SAVED**.

XIII · ORIENTATION IN A LONG GAME

What matters now

The header identifies the campaign, act and phase. Open **Company → Development tree**, choose a campaign and goal path, and select a goal. In **Goal details**, compare **Current → Target** and follow an unmet requirement to the relevant action. **Predecessors** and **Leads to** show the connections. Some act goals are independent; do not treat every goal as the next stage of one sequence. Distinguish recorded achievements from today's values.

You can preview later campaigns in the development tree. Your next actions still depend on the requirements and dates in your current game. Essen-West and the three strategies have their own works-plan routes; at the experimental works, use **Open works plan**.

Check current options under **Actions**. Expand **Temporarily unavailable actions** to read the precise reason for a block. A new-item indicator marks an unlock. After a month change, check the newly reviewed plan in the **Order book**.

The **Business ledger** accompanies the long game; **Situation** complements it in later campaigns. Dynasty, age, health, experience, authority and responsibilities remain traceable across generations. Businesses show expansion, maintenance, production, contracts, markets, stock and receivables where those values actually apply to the current stage.

Family decisions separate genuine alternatives from any option to withdraw, and distinguish immediate monthly effects from longer-term direction. Personal experience stays with the person; documented knowledge belongs to the business and is transferable.

If an older save can be extended safely, the game reports the number of compatible additions. Unreadable, too-new or contradictory files receive an understandable explanation and safe routes back to save selection or a new dynasty. Technical validation paths are not shown.

Bug or intended rule?

1. Before an action, note the current value and forecast or save the game.
2. Schedule only the action in question and open the monthly closing.
3. Separate its direct effect from wages, upkeep, wear and random consequences.
4. Check the chronicle for a realised risk or historical event.
5. When reporting a problem, include the game month, action, before/after values and, where possible, the relevant save.

> **A useful distinction:** A maintenance preview may show 70 → 100, while the monthly closing shows 99.7. This can reflect maintenance followed by time-related ageing, not incomplete maintenance.

A · Businesses and saleable products

Excluding trade, haulage and mines. Products can be transferred for further processing or sold on the market. Years indicate the earliest eligibility; construction time, land and other requirements still apply.

Business	Saleable products / services	Main inputs	Earliest
Metal goods workshop at the founding grounds	Tools; hardened tools after research	Iron/steel semi-finished material, hard coal	1807
Tool works	Tools and repair orders	Iron/steel semi-finished material, hard coal	1807
Essen-West manufacturing department (Campaign II)	By strategy: inspected quality lot, standardised supplier lot or combined manufacturing and trading lot	Iron/steel semi-finished material, hard coal	After commissioning and prerequisites
Steelmaking, foundry and rolling works at Essen-West	Industrial spare parts; civilian machine components	Iron/steel semi-finished material, hard coal	1854
Parts works	Industrial spare parts	Iron/steel semi-finished material, hard coal	1854
Cokery	Furnace coke	Hard coal	1854
Blast-furnace works	Pig iron	Iron ore, furnace coke	1854
Bessemer steelworks	Crude steel	Pig iron	1862
Rolling mill	Rolled steel	Crude steel	1862
Machine works	Machine assemblies	Rolled steel	1862
Soda chemical works	Soda ash	Industrial salt, limestone, sulfuric acid, hard coal	1865
Shipyard	Merchant steamships, ship repairs; later supply ships	Rolled steel, machine assemblies; later also electrical assemblies	1872
Industrial installation works	Industrial plants; later construction, modernisation and repair projects (page C)	Rolled steel, machine assemblies; electrical assemblies depending on contract	1872
Electrical works	Electrical assemblies	Rolled steel, copper	1875

> Pig iron, crude steel and rolled steel are different goods. None automatically replaces the iron/steel semi-finished material used by workshops. Civilian machine components and machine assemblies are also distinct products.

The crucible steel experimental works support development and do not produce a regular stock item. The Bessemer line and open-hearth development projects at Essen-West are distinct from the standalone businesses listed here. “Produce and directly sell a railway series” is a direct order with no separately traded stock item.

B · Guide prices for goods

Rounded game reference values when each product is introduced, before personal market bonuses and volume discounts. These are sales revenues before materials, operating and transport costs, not profits or guaranteed offers.

Product	Price unit	Approx. thalers per unit
Tools / tools and repair orders	Order / goods unit	200
Hardened tools	Order / goods unit	230
Industrial spare parts	Goods unit	410
Civilian machine components	Goods unit	760
Furnace coke	Tonne	36
Pig iron	Tonne	102
Crude steel	Tonne	150
Rolled steel	Tonne	203
Machine assemblies	Assembly	5,550
Soda ash	Tonne	119
Electrical assemblies	Assembly	226

For tools, “order” is the service unit counted by the game; it does not specify a number of individual screws or tools.

Earlier manufactured goods from Essen-West

Guide prices per goods unit, by strategy and period. A production batch contains several goods units; the price is not for the entire batch.

Product	1837–1849	1850–1853
Inspected quality lot	430	885
Standardised supplier lot	317	640
Combined manufacturing and trading lot	385	745

Prices are guides. Market region, sales volume and developments in the game affect actual revenue. Spare parts and civilian machine component reference prices rise in later industrial periods; the figures here are their introductory values from 1854.

> One comparison basis: All prices in this appendix are in thalers. From 1876 the game displays marks, and from 1924 reichsmarks: 1 thaler = 3 marks or 3 reichsmarks. Example: 226 thalers correspond to 678 marks.

C · Shipyard and plant engineering contracts

These customer contracts run for several months. The figure is total contract revenue, received through deposits, progress payments and final settlement. Materials, staffing and other operating costs must be paid from it.

Product / customer contract	Business	From	Months	Approx. total thalers
Build a merchant steamship	Shipyard	1872-01	18	4,000,000
Overhaul a merchant steamship	Shipyard	1872-01	3	660,000
Install an industrial machine plant	Industrial installation works	1872-01	9	1,300,000
Bridge and heavy port installation	Industrial installation works	1889-01	12	1,820,000
Electrical power station	Industrial installation works	1895-01	12	2,340,000
Public supply ship	Shipyard	1900-01	24	4,800,000
Industrial modernisation installation	Industrial installation works	1908-01	6	1,105,000
Military industrial contract	Industrial installation works	1914-08	9	2,145,000
Civilian industrial conversion	Industrial installation works	1919-01	6	1,040,000
Automation and energy installation	Industrial installation works	1925-01	12	2,730,000
Industrial repair programme	Industrial installation works	1929-01	3	520,000

> Dates alone do not unlock a contract: the business, free capacity, materials and any required qualifications must be available. The military industrial contract is available only from August 1914 to October 1918.

One comparison basis: All prices in this appendix are in thalers. From 1876 the game displays marks, and from 1924 reichsmarks: 1 thaler = 3 marks or 3 reichsmarks. Example: 226 thalers correspond to 678 marks.