nan Firms Primec [']s War Machine

By R. Jeffrey Smith and Marc Fisher Washington Post Staff Writers

econd of two articles

BONN-In the late 1980s, German export officials noted that Iraq's state-run industrial complex was hungry for gas bottles, lampposts and milk separators-and approved exports of metal presses and other equipment necessary to produce them.

At the time, Iraq was a country that Germany and other Western nations had reason to be worried about. But what harm was there in gas bottles, lampposts and milk separators?

The question was woefully naive. Iraq needed the Germandesigned metal presses not to make milk separators, but to produce missile combustion chambers and equip plants that were churning out, among other things, uranium centrifuges for making nuclear weapons.

In the wake of last year's Persian Gulf War against Iraq, United Nations inspectors and German prosecutors are learning just how easily German firms circumvented their country's weak export control mechanisms to sell Iraq the technology, parts and advice it needed for nuclear, missile, poison gas and germ weapon programs.

What they have discovered is : that a laissez-faire official attitude, bolstered by a desire for export-related profits, allowed German companies to supply Iraq from 1986 to 1990 with an estimated \$198 million of socalled dual-use items. These are products that theoretically had civilian uses, but, according to German prosecutors, were often clearly meant for military use.

Companies located in other countries, including Switzerland, Britain, France, Italy and the United States, contributed to the buildup of Iraqi President Saddam Hussein's military machine, and German firms sold no armaments more dangerous than pistols and hunting rifles. But investigators have found documents and other physical evidence im-

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IRAQ, From A1 plicating German companies as Iraq's most reliable and useful source of the technology and ma-terials for the frightening weapons of mass destruction that would cement Iraq's reputation as a danger-

ous regional power. Evidence turned up so far, and described in a series of unpublicized German, U.N. and U.S. reports, indicates that:

A half-dozen German firms sold Iraq equipment, such as sophisticatd lathes and presses, needed to

enrich uranium for a nuclear bomb or helped Iraqi scientists overcome key technical problems.

Officials of a German firm designed four plants capable of turn-ing out hundreds of tons of deadly poison gases, while at least three other German firms made equipment Iraq needed to fill chemical fockets, bombs and ballistic missile

Warneaus. Six German firms supplied some of the equipment Iraq needed to make botulin toxin and mycotoxin germ weapons, including devices ratories, concentrate pathogens, protect workers from contamination and allow technicians to tra-_verse a contaminated battlefield. Sixteen German firms contracted to supply equipment used in Iraq's ballistic missile program, including turbopumps, rocket motor nozzies, high-pressure air intake systems, special welding components, high quality steel rods and pipes, and fuel systems.

Some of the firms knowingly supplied Iraq with the machinery it needed to make its own missile combustion chambers and fuel injectors. Others helped redesign and manufacture Iraq's missile gyroscopes, supplied plans for a complete fuel storage facility and helped creite and equip a complete missile auality assurance program.

German firms also supplied the chassis, motors and electrical distributors for mobile missile launchers, and shipped missile-related tractors and semitrailers equipped ith lighting and other features for inlitary operations. U.N. inspectors in Iraq have found German names on Scud missile pressure lines, gauges, electrical parts, fuel tanks and air bottles.

Eleven German firms earned a total of roughly \$50 million for equipment and advice used to extend the range and improve the accuracy of Scud missiles eventually fired at Israel and Saudi Arabia in the gulf war, according to U.N. docments.

Many of the German firms provided help in more than one type of weaponry and had business dealings with each other on Iraq's behalf, the documents state. "It was a pattern of, activities by specialized firms or, activities by several and have a that do this kind of work and have a history of dealings" with rogue na-dons, said a U.S. official who has tracked the Iraqi purchasing oper-

ation.

To date, only one German company has been convicted of helping Iraq, according to Eckhard Fischer, a staff expert on export controls for the German legislature. Four firms are now on trial for export violations, 37 others are under investigation, and several executives have been arrested and are awaiting trial, he said.

Much of the information detailing the activities of these firms is contained in reports that analysis been shielded from official release by the United Nations, Germany and the United States because of what some authorities say are political gensitivities.

The documents include a classified report to the German legislature on the full range of German-Iraqi ties, a report to the German government by the International Atomic Energy Agency, a report by a German member of a U.N. inspection team and a German government report for the U.N. Special Commission on Iraq.

Some details have also emerged in interviews with German officials about the many criminal investigations Germany started last year, using evidence derived from U.S. intelligence reports, seized Iraqi procurement records and the observations of inspection teams roaming Iraq under the authority of a U.N.-backed cease-fire resolution agreed upon last spring.

A Lack of Oversight

Aside from the lure of impressive technology, Germany offered Iraq a system designed to protect private businesses from government interfigence. Pakistinis, Brazilians and Libyans had already used the German connection for bomb and missile projects, according to U.S. and German officials; Iraq simply followed the beaten path.

Since the Carter administration, U.S. businesses have confronted export controls motivated by human rights and other policy concerns. But German business has always operated, as one U.S. official said, on the "assumption that you can sell anything not specifically prohibited"—a practice motivated partly by Germany's economic dependence on exports for 60 percent of its gross national product.

"In contrast to what happens in the United States, exports in Germany are subject to mandatory li-

U.S. officials in the 1980s frequently passed intelligence to Germany about the involvement of German firms in Iraq's development of deadly weapon systems. But they were repeatedly frustrated by what they described as Bonn's excruciatingly slow response. It took extreme political embarrassment—after a stream of revelations in 1990, Chancellor Helmut Kohl called German business activities "a source of shame"—to force a toughening of export controls. German officials now describe their revamped export control system as among the tightest in the world. But U.S. officials said no other

But U.S. officials said no other country trading extensively with Iraq before the Persian Gulf War came close to matching Germany's contribution. "My understanding is ... that a very high percentage of the stuff Saddam Hussein got came from Germany—like maybe 80 percent of it," said House Armed Services Committee Chairman Les Aspin (D-Wis.).

Aspin (D-Wis.). "The German role was overwhelming" in Iraq's development of chemical weapons, said Fischer, "out of proportion to all the others." Moreover, he said, German parts accounted for about 25 percent of the Iraqi missile program, the largest portion not produced by Iraq itself.

Dealing by Word of Mouth

German companies were selected and courted by technology-literate, German-speaking Iraqi government agents. In Baghdad, the overall direction of the country's nuclearweapon-related purchases was provided by the secretive Department 2000, part of Iraq's so-called PC-3 program run, according to German and U.N. officials, by Abd Hamilm Ibrahim Hajjaj, a physicist who became fluent in German while studying at Goettingen University.

"There's no doubt that he made good use of" his language skills, one investigator said.

Working through Iraq's Embassy in Bonn, which served as headquarters for Iraqi procurement efforts throughout Europe, Iraqi agents used written orders from the embassy's chief commercial officer to purchase dual-use equipment worth millions of dollars through German banks, U.S. officials and legislators said.

Rep. Henry B. Gonzalez (D-Tex.), the House Banking Committee chairman who is investigating U.S. policy toward Iraq before the gulf war, said the Iraqi acquisition program operated through a chain starting with military factories' request for parts. The Iraqi Military

Industrialization Board would send, the request to Bagidad's embassy, in Germany. The embassy would then forward the orders to front companies controlled by the Iraqi Secret Service Organization, Gonzalez said.

It was all done by word of mouth," said a German prosecutor examining the records of several firms. "They'd find one company, hear about another and approach them. They would put out word of what they were looking for and go get it.... They would seek out the one engineer in a firm who knew a particular part could be used for other than civilian purposes. Specific things were desired and sought. One knew who one was dealing with."

A careful study of German industry led Iraq to, among other firms, H&H Metalform, a toolmaking firm in the sleepy Westphalian town of Drensteinfurt. A key figure in Iraqi dealings with H&H, according to the company, was Anees Mansur-Wadi, a purchasing agent whose operations have been blocked in England and the United States for alleged export law violations. Hy-Fischer said investigators have concluded that officials of two London-based Iraqi front companies linked to Wadi contacted H&H in 1985, bearing a credit note for \$3 million provided by the Iraqi government.

By the following year, H&H was selling Iraq material needed for the production of poison gas, Fischer said, H&H has denied shipping anything for nefarious purposes.

No U.S. criminal charges have been brought against Wadi, according to a Treasury Department spokesman, Wadi did not return phone calls, and his attorney, Victoria Toensing, declined to answer questions about any contacts between Wadi and H&H. But she said that "the business transactions he performed in the late 1980s with Iraq ... were licensed by the appropriate European government." She also said Wadi "has not violated U.S. law."

to U.N. and German documents, H&H executives also sold eight sophisticated metal presses for \$16 million to the Nassr State Establishment and helped Baghdad obtain crucial molds and sheet steel for rocket production and special

censing only in exceptional cases," German authors Holger Koppe and Egmont R. Koch said in a recent book about weapons-related exports to the Third World.

lathes for making centrifuge parts. H&H has maintained that the presses-devices for shaping cyl-inders-"cannot be used for production of centrifuges" but were to be used to make lampposts, industrial gas bottles or milk cans. At the time of the sales, German export officials ruled the equipment was not covered by export restrictions and granted H&H a total of three permits for the shipments, accord-"

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Office. U.N. inspectors visiting Taji last December found one of the machines equipped with a device for making centrifuge parts, and an unpublished U.N. inspection report

alleges that the firm's prior sales of similar equipment to Brazil's mis-

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- sile program leave no doubt that "the accused parties knew the claimed application [in Iraq] was false." - 19
- H&H's reported assistance to Saddam's regime did not stop with the presses. Following an infusion of several million dollars in cash from an Iraqi trading company, H&H officials escorted two German centrifuge experts on a visit to Taji, a key Iraqi weapons-research center, where the experts helped fix Iraqi blunders in fitting the centri-. fuge parts, according to remarks in a London newspaper by one of the

a London newspaper by one of the experts, Bruno Stemmler, Sterain-ier declined to comment 16 The Washington Post. There was an information net-work among German technicians who helped solve Iraqi problems." Fischer said, "H&H played a key role in providing not just parts but know-how," functioning in effect as an Iraqi

base of operations in Germany.

Last January, German prosecu-tors ordered the arrest of H&H owners Dietrich Hinze and Peter Hutten for export law violations. Hinze and Hutten, still in jail awaiting formal charges, say nothing -they shipped to Iraq was for nefarious purposes.

H&H Metalform said in a written statement issued last year in response to press reports that its dealings with Iraq began in 1987, not 1985, that Iraq's investment in the company of several million dollars was only a down payment for services and that the company's assistance to Iraq was limited to innocuous exports and technical help on a memorial arch at the en-

trance to Baghdad. I he arch cerebrates the outcome of the 1980-88 Iraq-Iran war, incorporating in its design dozens of helmets taken from dead Iranian soldiers.

Surreptitious Shipment

Investigators also have determined that H&H officials helped the

Iraqis purchase three computer-controlled lathes from Neue Magdeburger Wekzeugmaschinenfabrik. again with the approval of German export officials. The manufacturer said the lathes were standard ones intended solely for civilian use. U.N. inspectors have since found them in crates at Taji equipped with "fixtures" precisely sized for centrifuge work, according to a published U.N. report.

U.N. investigators have concluded that Iraq obtained the lathes and H&H presses partly to process

800 tons of aluminum tubing or-derects from Arcinigte Alumin-werke in Bonn-enough to make roughly 5,000 casings for centri-fuges intended to enrich uranium for a nuclear weapon.

In a German government report to the United Nations, authorities have identified the C. Plath company of Hamburg as an intermediary in the tubing shipments.

A separate German government report to the U.N. Special Commission on Iraq also has linked the firm to illicit shipments to Iraq of \$1.8 million worth of gyroscopes, motors and other missile components. Officials from Plath, a wholly owned subsidiary of the Artington-based defense contractor Litton Systems, told German export authorities the devices were intended for oil exploration, according to the German report to the United Nations. The claim prompted official inquiries, which in turn led Plath to withdraw, its license application and send the equipment surreptitiously, the report said. * "All blueprints of the delivered"

systems can clearly be tied to the Scud B navigation systems," the German report said. The report named two company officials who, witnesses claimed, "had to have known that the exported components were destined for missile launcher applications."

Iraqi officials have acknowledged that Plath and two other firms manufactured small components for a "centrifuge prototype," according to a separate report last May by the International Atomic Energy Agen-CY.

But Litton spokesman John Georg denied that Plath collaborated with the Iraqi nuclear program and said only "purely commercial products" such as machine components, flow switches and pressure-measuring devices were exported to Iraq under three contracts signed in 1988 and 1989. He said Plath did not deliver gyroscopes ordered by Iraq because an inhouse lawyer said such exports would violate German law. Georg denied that Plath helped Iraq obtain centrifuge tubing. He said reports of Plath's involvement came from "an agent of some sort" whose efforts "looked as if they were coming from our company." Georg refused to identify the agent. saying only that he "did do some work for us but did not do work you described."

Suppliers 'Had to Know'

The business between Iraq and H&H-recruiting, trade, delivery and maintenance-occurred with a stamp of approval from German export authunities. Exporters as a rule gave a plausible civilian use in their applications," said Hans-Peter Cruse, a top official of Germany's

Export Control Office, "Only through U.N. Suspections of the last few months have we learned of military uses in some sites."

German export regulators-often the same officials who once approved the exports to frag now say they are convinced the compa-

nies knew what they were doing. "They had to know," said Hans-Dieter Corvinus, a department head at the Export Control Office. in Eschborn. "The engineer who made the machine knew what it was for, Usually the German exporter would install the equipment." On paper at least, Germany has

considerably tightened its enforce-ment abilities in the past two years. What it took to push German authorities into action is a subject of debate.

The Germans maintain that as soon as they learned the scope of illegal exports, they moved to put teeth in their laws. Some U.S. ofncials confirm that account. German officials "were horrified," one U.S. diplomat said, "The notion that [Iraqi poison gas weapons] might be used against the Israelia was an absolute nightmare to the government."

But Fischer and others say U.S. intelligence reports detailing the German involvement with Iraq were made available to Boin officials long before the government took any action.

took any action. For example, Washington first warned of German corporate involvement in Iraqi chemical weapons projects in 1984, but inspectors dispatched from Boars concluded the projects were benign. Not until 1990, when a Swiss technical consultant affirmed the original U.S. view, did Boan take action against the firms. Programmelt bugher, regulations of poison gas-related exports were imposed by Boan in 1984, 1986, 1989 and 1990. Regarding germ weapons, the German government was first warned of Iraq's interest in them in 1994 and was informed of German

Regarding germ weapons, the German government was first warned of Iraq's interest in them in 1984 and was informed of German corporate involvement with Iraq in this area in January 1988, according to German documents. But Bonn did not caution potential, German suppliers until May 1990 and did not amend its regulations to dover systems, suited for germ weapon production until July 1990. One U.S. official Sid tippins to

Bonn sometimes nearesked soverment indunes that in turn led to feverish efforts by German firms to halt leiks about their activities. A former U.S. diplomat said Washington complained to Germany about-Iraqi purchasing efforts at least monthly between 1980 and 1990. "It remains to be seen whether they

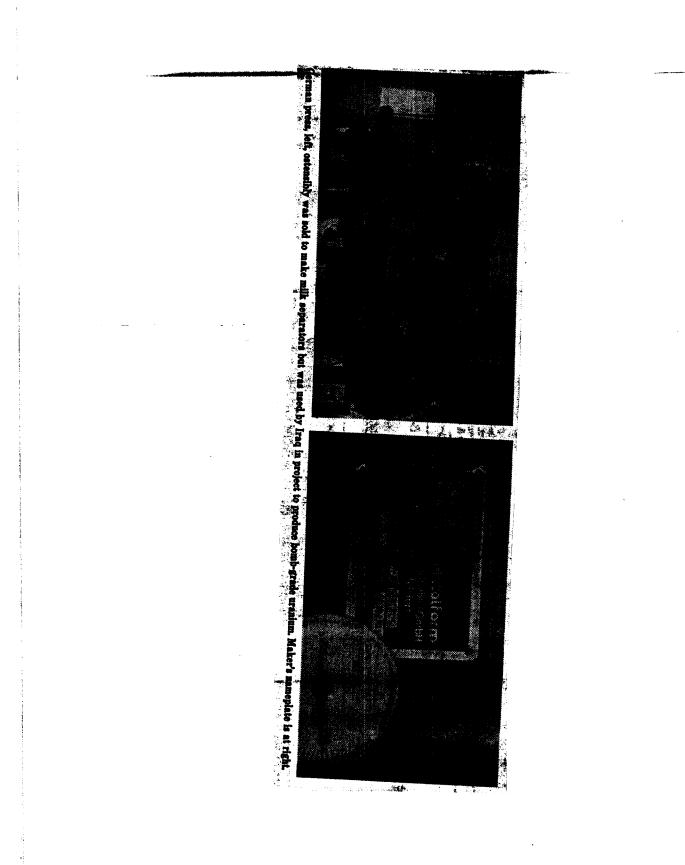
have developed a sense of how yrong dis is an USC investigator said recently.

Germany Toughens Controls,

The strain between U.S. and German' officials reflects differences in approach to export controls and criminal justice. U.S. officials complain that German grosecutors are moving at a shall of pace, but prosecutors hote German law requires hard-to-get proof that executives knew the eventual use of -

products they shipped to trag Prosecutors also say their efforts were hampered by tight restrictions. on wiretapping and other surveil-lance useful in economic crime investigations. Until early last year, "our laws did not enable us to stop exports that we later learned were a dangerous," said Hana Rummer, areadante of Cleanary's The new law is the strictest in the world, including the American rules." Flying in the face of constricts of a tradition and law, Germany has ex-panded criminal statuted to cover activities by German citizens outside national borders, enlarged the list of goods subject to expert con-trols and permitted police surveils lance of suspect companies. Its etc port control staff has been enlarged from 70 to 430. Proposed exports to be used for military or strategic purposes, even exports of dual-use countriment, many's Foreign Ministry And a company's foreign Ministry And a company's top executive must sign every application, so management can no longer claim ignorance of questionable deals. In January, the Economics Mines istry also won the right to halt ex-ports without cause. Germany used its new authority almost immedi-grely by conflacating, at U.S. re-quest a U.S. nade idiot lystem being sent through Holland and Germany to Libya. Selfar 21-20 Similar masures hatie abt been a tries that actively trade, with rogue nations, and U.S., officials note that the planned elimination of trade barriers within the European Community is bound to complicate the West's tracking and prosecution f With dual-use products, "there comes a point where you just can't know, where it becomes a political question of who can we trust in the importing country Corvinus said "Dual use is a nearly unsolvable problem. A plant's use can always be changed. The only absolute answer to it is total embargo."

Special correspondents Michael Re-Wist in Vienna and Steve Vogel in Bonn contributed to this report.



Messerschmitt-Boolkow-Blohm	Gildemeister Projecta	Invaio Corp.	Thyssen GmbH	Rhein Bayern Fahrzougoau	SP CONTRACTOR
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Served as chief German subcontractor at Saad-16, according b German government report. Separately sold helicopters to Iraq that peptert. GERMANY GERMANY COMPLETE A CONTRACT OF A	Served as general contractor at a major missile and nuclear facility, Saad-16, coordinating purchase of electronic equipment and other gear. German government report to legislature says firm gave false informa- typor to othain export livenses.	Seized company documents list nine (rad) organizations as purchas- ing, ordering or billing agents in missile parts transactions. "In some cases, the Iraqi organizations change several times in a single transac- tion " said a German government report to the United Nations.	A September 1990 search of offices found evidence showing compa- ny afficials were aware that turbopump units sold to Iraq could be used in rocket motors, according to a German government report. Company also played major role in constructing and equipping con- vertional manufacturing plant at Taji.	Supplied equipment for manufacturing of botulin toxin and mycotoxin; germ weapons along with five other firms, according to German govern- ment report to German legislature. Seized company documents included drawings of missile parts con- taining a notation "SK" finked to the Scud B missile improvement pro- taining a notation "SK" finked to the Scud B missile improvement pro-	EXAMPLES OF THE GERMAN-IRAQI CONNECTION ALLEGED INVOLVEMENT Phincipal contractor for construction of chemical weapons plant at Samarra, according to secret U.S. government report on Iraq, which said the firm "procured materials, supplied technical experts, trained larqi technicians, installed equipment and generally was instrumental in the startup of larqs production lines for chemical weapons agents. The report added that "hundreds of German advisens, many of whom were kart Kolb subcontractors, were present at Samarra through the mid- 1990s."
Spokesman Hans-Juegen Wieland says the laboratories and equipment supplied to iraq could be used to test rocket the make or test nockets themselves. He says the largis pro- vide assurances the equipment was to be used exclusively for scientific research.	 Company spokesman Axel Kennia denies firm obtained ear. export licenses by giving false information, says firm built plant according to Iraqi specifications and had insufficient "technical know-how" to reach an independent conclusion about its purpose. 	Attorney Richard Einer says company sold "small pumps" to Iraq but they were for general use. Company chief Friedrich Simon Heiner has pleaded not guilty.	a- Company spokesman says firm exported pumps but did ad not know how they would be used. No official charges filed but investigation is continuing. Spokesman Hans Peter Schleriner says when company turned over plant in 1986, it "was not forespen" that Iraq would later use it to make gun barrels.	Company spokesman says he v of biological-related equipment. No official charges filed yet in a lasted more than 18 months, tho rently in Jail. Company lawyer Will not guilty.	COMPANY REPLY COMPANY REPLY Company officials deny allegato ical arms factories in linat.