On-Site Inspections Under the INF Treaty: A Post-Mortem

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Executive Summary

- Midnight on 31 May 2001 marked the end of all on-site inspections (OSIs) under the Intermediate-range Nuclear Forces (INF) Treaty. Signed by the US and the Soviet Union in 1987, the treaty has now come of age and must survive for the rest of its indefinite duration without the security of regular OSIs. The ending of OSIs provides an opportunity to assess the success of this aspect of the verification regime and how the treaty is to be verified without them.

- The INF Treaty banned all ground-launched ballistic and cruise missiles with ranges between 500 and 5,500 kilometres. It was the first treaty to eliminate a whole class of nuclear weapons and the first nuclear arms control agreement to provide for OSIs. All 2,692 INF missiles were eliminated by May 1991, within the three-year time limit. A further 10 years of OSIs helped provide reassurance of continuing compliance.

- The treaty will continue to be verified by so-called national technical means, primarily satellites. The Special Verification Commission, set up under the treaty to resolve issues relating to treaty implementation and compliance, will continue to meet when requested by a treaty party.

- Universal opinion is that the treaty has been successfully verified to date. However, a number of problems were encountered and lessons learned from the experience. In particular, the treaty negotiators proved to have been overly cautious in envisaging how inspections would actually be conducted.

- One of the main achievements of OSIs under the INF Treaty has been to create a basic model and procedures for inspections which have been adopted in the more complex arms control and disarmament treaties that have followed.

VERTIC briefing paper

INTRODUCTION

Midnight on 31 May 2001 marked the conclusion of 13 years of on-site inspections under the Intermediate-range Nuclear Forces (INF) Treaty.[1] From that date the right of US and Russia to conduct continuous monitoring of one of each other's missile assembly plants under the treaty ended. The right of the parties to conduct short-notice on-site inspections (OSIs) at other facilities declared under the treaty also expired. The INF Treaty, however, is of indefinite duration, and the parties will continue to monitor each other's compliance using their own national technical means (NTM), including remote monitoring capabilities.

Signed in 1987 by the US and the Soviet Union, the INF treaty has now come of age and must survive indefinitely without the security of regular inspections. The ending of OSIs provides an opportunity to assess the success of this aspect of the verification regime and how the treaty is to be verified in the future.

SCOPE OF THE TREATY

The INF Treaty, signed by US President Ronald Reagan and Soviet General Secretary Mikhail Gorbachev, permanently banned all US and Soviet ground-launched ballistic and cruise missiles with ranges between 500 and 5,500 kilometres. It took six years of difficult negotiations to reach mutual agreement on the 'double global zero' proposal to eliminate all intermediate-range *and* shorter-range missiles. The INF agreement was the first arms reduction treaty to eliminate a whole class of nuclear weapons. All previous nuclear agreements were restricted to establishing ceilings and imposing other quantitative and qualitative limitations. The accord was also the first nuclear arms reduction treaty to allow OSIs.

The treaty only banned the missiles themselves. It did not eliminate any INF warheads or guidance systems, which were returned to stockpiles and, in some cases, reused. Conventionally-armed INF missiles were also prohibited. The ease with which nuclear warheads could have been redeployed on conventionally-armed INF missiles, combined with the difficulty of distinguishing a conventionally-armed INF system from a nuclear-armed one, would have created insurmountable verification problems.

In accordance with the treaty, all 2,692 US and Soviet INF missiles, their launchers and support equipment were destroyed by May 1991. The systems eliminated were some of the most advanced at the time, including US Pershing IIs and Soviet SS-20s. The accord thus scrapped the controversial 'Euromissile' deployments, which had been the cause of mass protests in Western Europe. The US removed missiles from bases in Belgium, Italy, the Netherlands, the Federal Republic of Germany (West Germany) and the UK, while the Soviets removed theirs from bases in the Democratic Republic of Germany (East Germany) and Czechoslovakia.

INF Systems and Numbers of Missiles Eliminated by May 1991[2]

Soviet						
System	SS-20	SS-12	SS-4	SS-5	SS-23	SSC-X-4
Total	654	718	149	6	239	80
Total 1,846						

US			
System	Pershing 1A	Pershing II	BGM 109
Total	169	234	443
Total 846			

Source Joseph P. Harahan, '*On-site inspections under the INF treaty*', US Department of Defense, Washington DC, 1993, p. 8.

VERIFICATION

Verification had been one of the main areas of dispute during the INF negotiations, but with mutual acceptance of intrusive OSIs final agreement was possible. The verification provisions were at the time the most detailed and comprehensive ever agreed in a nuclear arms control treaty. Because the missile systems to be eliminated were small and mobile, the agreement also had to be unprecedented in its level of intrusiveness. On the other hand, the decision to

[1] The official title of the treaty is: Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-range and Shorter-Range Missiles. Shorter-range missiles were defined as those with 500-1,000 km ranges, while intermediate-range were those with 1,000-5,500 km ranges.

[2] Both the Soviet SSC-X-4 and the US Pershing 1B, had been tested but not deployed. As of 1 June 1988 no Pershing 1Bs had yet been built and only 80 Soviet SSC-X-4s had been produced for testing.

eliminate all INF systems, as opposed to only reducing their number, made the verification task significantly easier.

The INF verification system combined cooperative measures with so-called national technical means. NTM encompass all legitimate means of gathering information that are available to a state party, most importantly the use of satellites. The INF Treaty explicitly recognised the role of NTM, prohibited interference with them and banned concealment measures designed to impede their use for verification purposes. OSIs were designed to reinforce and enhance the information gained through NTM and to provide additional evidence of compliance.

In addition to the 17-article treaty, two protocols were appended, one relating to elimination and the other to on-site inspections. The accompanying Memorandum of Understanding (MOU) provided a joint public declaration by both sides of the numbers and location of all treaty-limited items. This information was previously highly classified and its disclosure by both sides demonstrated good faith in the treaty.

The MOU created the baseline numbers against which compliance was to be judged. An updated and revised MOU, providing the technical specifications of all the systems subject to the treaty, was agreed on 1 June 1988. This information was the basis for a treaty database that was updated every six months. The MOU included the technical specifications of all missile systems, which had to be verified and agreed through baseline inspections before any other inspections could start. Any deviation from the agreed figures would be considered unambiguous proof of a violation.

The data contained in the original MOU provided a number of surprises to each side concerning systems and deployments. The numbers of both missiles and launchers and some of the specifications declared by both sides were significantly larger than previously estimated.[3]

The treaty mandated that the parties use their existing Nuclear Risk Reduction Centres (NRRCs) to provide continuous communication between them for all official treaty data and notifications required under the treaty.[4] The communication demands of the treaty were unprecedented.

Information that had to be reliably communicated included all the data detailed in the MOU; details of proposed OSIs; notifications of INF missile system movements and eliminations; and clarifications necessary under the treaty's inspection and elimination protocols.

To facilitate compliance, the treaty established a permanent Special Verification Commission (SVC) to resolve issues relating to treaty implementation and to consider measures to enhance the effectiveness of the treaty.

Inspections under the INF Treaty
Baseline inspections to verify the location and number of all declared items.
Elimination inspections to witness the eradication of missiles.
Closeout inspections to confirm that a missile base or support facility was free of INF equipment.
Short-notice inspections to alleviate concerns about non-compliance. For the first 3 years each party was allowed 20 per year, excluding elimination inspections; for the next 5 years and the final 5 years each party was permitted 15 and 10 per year respectively.
Portal monitoring of one former INF missile assembly plant on each party's territory to confirm that INF missile production had ceased.

Types of Inspections

Baseline Inspections were, both operationally and logistically, critical to the success of the treaty. Conducted between 30 and 90 days after the treaty's entry into force, their purpose was 'to verify the numbers of missiles, launchers, support structures and equipment, and other data as of the date of entry into force'.[5] Inspections either confirmed the information contained in the MOU or led to it being corrected. Inspectors had the right to inspect any room or object at a declared site that was equal to or greater than the

[3] See International Institute for Strategic Studies (IISS), *Strategic Survey 1987-1988,* IISS, London, 1988, pp. 21-32.

[4] The NRRCs opened on 15 September 1987. They established direct, dedicated, 24-hours-a-day communications links for exchanging information and notifications under existing and future arms control and disarmament agreements.

[5] INF Treaty Article XI, paragraph 3.

dimensions of a treaty-limited item. Tape measures were, in this case, the most important piece of inspection equipment.

The baseline inspection period was the most intensive period of inspection activity during the entire 13 years of OSIs. In the 60-day baseline inspection period the US conducted 117 inspections (nearly two per day), while the Soviets conducted 34. Each party also had to escort visiting inspectors. For baseline inspections to work, the procedures for point of entry, communications, transport, logistics, linguists and escorts had to be established. Both parties had previously conducted full-scale mock inspections which allowed inspectors to learn in a controlled environment, familiarise themselves with treaty procedures, identify their mission and coordinate the necessary logistical infrastructure before real inspections began. As a result of the successful pioneering experience with baseline inspections under the INF Treaty, such inspections were included in the 1991 Strategic Arms Reduction (START) Treaty and the 1990 Conventional Forces in Europe (CFE) Treaty.[6]

Elimination Inspections were conducted at designated sites, eight in the Soviet Union and four in the US.[7] The treaty stated that no missiles, launchers or support equipment could be eliminated unless an inspection team was present to witness and report on the destruction. All shorter-range missiles were eliminated within the first 18 months and the intermediate-range missiles within the first three years. All eliminations had to be conducted in accordance with the Protocol on Elimination, which served as a detailed destruction manual, prescribing the exact methods of destruction, to ensure irreversible elimination.[8]

Closeout Inspections allowed each party to observe the status of a closed missile base, support facility, or launcher production facility. The inspections only occurred after the inspected party had previously notified the inspecting party, 30 days in advance, that all treaty-limited items had been removed and destroyed and that all activity relating to production, flight-testing, repair, storage, or deployment had ceased at the site. The purpose of the inspections was to verify and confirm that the site was free of all INF-related activity and thus 'closed out'.

US
Eliminated 2,332 treaty-limited items, including 846 INF missiles and 289 launchers.
Conducted 540 inspections at 133 declared sites.

Soviet Union and successor states
Eliminated 5,439 treaty-limited items, including 1,846 missiles and 825 launchers
Conducted 311 inspections at 31 declared facilities.

Source Adapted from 'State Department on 1987 INF Missile Treaty (Treaty Inspection Regime Ends May 31)', Fact Sheet, State Department, Washington DC, 16 May 2001. Available at usinfo.state.gov.

Short-Notice Inspections could be conducted at any declared facility at any time. Their purpose was to provide a mechanism to alleviate concerns over non-compliance and make it more likely that prohibited activity would be detected at an early stage, thereby acting as a deterrent against cheating. Inspections were conducted on a declining quota system (see table on page 3). Only at the point of entry did the inspecting party have to declare which site was to be inspected. The inspected party then had nine hours to transport the inspection team to the specified site. The inspection could last up to twenty-four hours. Within one hour of the announcement of the inspection the inspected party had to cease the movement of any treaty-limited items.[9]

The inspections were not 'any-time-anywhere' challenge inspections, but the nine-hour advance notification timeframe was intended to have a strong deterrent effect. The inspections marked the first time that close access to nuclear missiles was granted to another party under an arms control agreement. The inspections established procedures for the conduct of challenge inspections which were emulated in future treaties such as the 1993 Chemical Weapons Convention (CWC).

[6] START I contained additional early exhibition inspections. These involved the open display of the equipment to be eliminated, which was monitored by satellites, providing increased confidence in the subsequent baseline inspections.

[7] One of the US elimination sites was in the Federal Republic of Germany.

[8] Each party was allowed to eliminate up to 100 INF missiles by 'launching them to destruction' during the first six months of entry into force. This involved firing the missile while it was fixed to the ground, which destroyed the missile's working parts, and then destroying the remains of the missile canister. To verify the eliminations inspectors witnessed the launches. The Soviets eliminated 72 SS-20s in this manner.

[9] Since the inspectors could choose the time and the place of the inspection, this could be timed to provide the best possible coverage of the inspected site by NTM.

INF Inspections by Type and Number

Type	US	Soviet Union and Successor States	Total
Baseline	117	34	151
Closeout	101	27	128
Elimination	137	109	246
Short-Notice	185	141	326
Total	540	311	851

Source Defence Threat Reduction Agency (DTRA), '*INF Treaty On-Site Inspections 1988-2001*', DTRA, Fort Belvoir, VA, 2001, pp. 10-11.

Production Monitoring was also undertaken for the first time in a modern arms control treaty. Starting thirty days after entry into force, both parties had the right to station a permanent presence of up to thirty inspectors at one former INF missile final assembly plant or INF missile production facility on the territory of the other party. The US chose to monitor the final assembly plant at Votkinsk, in the Ural Mountains, while the Soviet Union selected a former INF rocket motor plant at Magna, Utah. Although inspectors could not enter the plants themselves, they could monitor the perimeter and portals continuously, 24 hours a day, for up to 13 years, to confirm the cessation of INF missile production. US Ambassador Steven Steiner said at the ceremony held in December 2000 to end OSIs that: 'The agreement ends a 13-year regime of 24-hour "portal monitoring"... Every truck, container, vehicle or cargo big enough to carry a missile that came out was inspected'.[10] Production monitoring was one of the most complex tasks conducted under the treaty.

It had been intended from the outset that production monitoring be included in the treaty, but the idea was dropped when it seemed unnecessarily intrusive. However, in the very final stage of negotiations the Soviets declared that the SS-25, a road mobile missile with a range of 6,500 miles, which was not banned, had a first stage 'outwardly similar but not interchangeable' with that of the SS-20 which *was* banned.[11] The verification problem was exacerbated by the fact that the Soviets were continuing production of the SS-25.

This last-minute surprise declaration could have unravelled the whole treaty. Fortunately, Sandia National Laboratories in the US had designed a mock-up of a portal monitoring system for the Votkinsk factory to test monitoring technology for either the INF or START treaties. These plans were presented to and negotiated with the Soviets and agreement reached. Both parties could stop, weigh and measure all vehicles leaving the monitored factory that were large and heavy enough to contain an INF missile. The US was also allowed to operate approved sensors and imaging devices, which were designed to measure, weigh and X-ray the rail cars leaving Votkinsk that were large and heavy enough to hold a canister with an INF missile inside. The X-ray imaging device known as CargoScan, approved under the treaty's MOU, would determine the length and diameter of the missile inside the canister. In addition, US inspectors were given the right, on a random basis eight times a year, to visually inspect and measure, using a stage-measuring device, a missile inside a launch canister exiting the factory.

Together these procedures allowed the US to verify that SS-20 missiles were not being placed inside SS-25 canisters. The monitoring of SS-25 production also gave the US a more accurate count of the numbers of these systems, which were subject to verification under START I [12]

Production monitoring of the Magna plant by the Soviets was undertaken more out of reciprocity than necessity, since the former *Pershing II* rocket motor plant did not assemble a missile with a stage that was

[10] US Ambassador Steven Steiner, cited in Stephanie Nebehay, 'US, Russia Agree to end INF Missile Inspections', *Reuters*, 14 December, 2000.

[11] The main difference was that the SS-20 was a two-stage missile in which the second stage was 2.87 metres long, while the SS-25 was a three-stage missile with a 3.07 metre-long second stage. Agreement on how to conduct inspections and verify the difference between the two systems was reached at 'technical talks' held from March to May 1988.

[12] SS-25s were also subject to monitoring by NTM, with Soviet cooperation, to verify that missiles banned under the treaty were not being hidden at Soviet military bases. Under these provisions, the US could, for the first three years of the treaty, or until a treaty limiting strategic offensive arms came into force, ask the Soviets to openly display SS-25s up to six times a year. The Soviets had to meet the request within six hours and display the missiles until 12 hours after the request was received, to permit US satellites to photograph them.

'outwardly similar' to a treaty-limited missile.[13] Nonetheless the Soviets and subsequently the Russians conducted continuous portal monitoring at Magna for the whole permitted 13-year period.

A unique aspect of INF production plant monitoring was that the US contracted a private company to provide personnel to help undertake monitoring activities at the Votkinsk plan. This arrangement helped keep the costs of continuous monitoring down.[14] It was the first time contractor personnel had been used in monitoring an arms control treaty.

Production monitoring under the INF treaty was also an important precedent for START I, which used similar procedures and employed contractor personnel. Negotiations on the two treaties were closely linked and coordinated in Washington with regard to the issue of production monitoring.

Portal monitoring of the Votkinsk plant will continue under START I. However, since START only allows the taking of weights and measurements, the CargoScan system has been dismantled. The Russians are conducting no START monitoring at Magna.

Production monitoring was one of the most innovative and complex but also one of the most expensive aspects of OSIs conducted under the INF Treaty. It deserves more study to determine the relative costs and benefits of such an undertaking.

IMPLEMENTATION

It is universally agreed that the INF Treaty has been successfully implemented and verified to date, and that it has provided crucial precedents for the more complex arms control agreements that followed. However, as with all arms control, the devil is in the detail, and a number of problems were encountered during the early years of implementing the treaty.

The most serious problem was caused by the break-up of the Soviet Union, which transformed the treaty from a bilateral, into a multilateral, one. After the Soviet Union's dissolution, the US informed the 12 successor states that it considered them all bound by the treaty.[15] Six of them—Belarus, Kazakhstan, Russia, Turkmenistan, Ukraine, and Uzbekistan—had INF sites on their territory subject to the inspection provisions of the treaty.[16] Updating the treaty required the negotiation in the SVC of agreements between the US and these states. Three new points of entry were created; new communication links were established, and apportionment of costs agreed.

There were otherwise only a few other, relatively inconsequential, difficulties pertaining to the treaty's implementation and verification.

In 1988 the US discovered eight defective Pershing 1a missiles (used for training) that it had failed to declare. These were reported to the Soviet Union and destroyed. In March 1990, US inspectors declared an 'ambiguity' after the Russians refused to allow the use of CargoScan to X-ray three SS-25s leaving the Votkinsk factory. Russia argued that the US equipment was recording images several centimetres larger than permitted and that these could be electronically enhanced, revealing secret design information. The US agreed to narrow the technical parameters of the imaging equipment and the issue was resolved.[17] In retrospect a less technical solution would have been preferable. The extremes in temperatures at Votkinsk, between -40° and +40° Celsius, caused a number of other technical problems.[18] More problems were encountered in attempting to accurately weigh snow-laden rail cars leaving the factory in winter.

In March 1990 the Germany Democratic Republic admitted possessing 24 conventionally armed SS-23 missiles and launchers. These were destroyed by the end of November 1990. A smaller number of SS-23s were also reported in Bulgaria and Czechoslovakia.

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[13] The need to ensure adherence to the treaty while maintaining reciprocity in inspection rights and procedures while inspecting differing missiles systems, presented a complex set of negotiation challenges.

[14] Contractor personnel were responsible for providing technical and operational support services and maintenance of the monitoring equipment. They could make up to a total of 23 of the 30 inspectors allowed on site. The site commander, deputy, and treaty specialists were either military personnel or were staff of the US On-Site Inspection Agency (OSIA).

[15] The US did not consider the Baltic States (Latvia, Lithuanian and Estonia) to be successors, since it had never recognised the legality of their incorporation into the Soviet Union. Although Slovakia did not become a party to the INF treaty, it completed the destruction of the SS-23 missiles that it inherited by October 2000. See 'Slovakia Destroys SS-23 Missiles', *Disarmament Diplomacy*, November 2000, p. 59.

[16] Turkmenistan and Uzbekistan each had one INF site subject to inspection, but no INF missiles. They did not participate in the treaty implementation process.

[17] See 'Controversies mar Soviet INF compliance', *Arms Control Today*, vol. 20, no.3, April 1990, p. 29.

[18] Both sides may have preferred a technical, hands-off approach to this verification problem. The Soviet Union may have felt during the negotiations that the imaging equipment would reveal less secret design information and that the removal of missiles from canisters was too dangerous.

Russia argued that these missiles had been transferred before the treaty came into force and had gone unreported to its foreign ministry.[19]

Finally, in 2001 the Russians accused the US of violating the treaty by using Hera missiles as targets for testing ballistic missile defence systems. Russia argued that the Hera was an INF missile and should not therefore be tested or produced.[20] This issue was discussed in the SVC, but no agreement reached. This is the sort of issue that could undermine the future standing of the treaty if it is not resolved. Although all systems were eliminated ten years ago, the treaty will continue to depend on political goodwill to survive.

LESSONS LEARNED

The verification of the INF Treaty has been an undisputed success. The treaty proved that OSIs could work as a counterpart to NTM. However, problems were encountered. The reality of OSIs was different from that imagined by the diplomats who drafted the treaty, since there was little experience to draw on. The treaty was a product of its time, the closing years of the Cold War, and as a result some provisions proved to be overly cautious and restrictive. The fact that the treaty required a whole ten years of OSIs after the last elimination, instead of say, five, is also a reflection of the air of mistrust in which the treaty was negotiated.

Although OSIs worked well, the inspectors tended to find themselves without the freedom to make simple decisions on the spot. For example, the treaty states that timelines for pre-inspection procedures should start immediately on arrival of the inspectors at a site. This meant at times that inspections started in the early hours of the morning, after inspectors had spent hours travelling. The treaty did not allow the inspectors to sleep first, even if this was in the interests of both parties.[21] There is a fine line between, on the one hand, putting as much detail as possible into a treaty text and, on the other, allowing the necessary flexibility for inspectors to deal with the realities of implementation.[22] The START negotiators learned from the INF experience and gave both the inspectors and the inspected party more options and flexibility.

Teething problems are inevitable in any venture of this complexity. Issues that might have originally been the subject of a demarche were, with improved political relations between the two sides, resolved amicably and quietly on-site. The treaty became easier to verify over time.

INDEFINITE VERIFICATION

Although the treaty contains a standard withdrawal clause allowing either party to renounce it for reasons of national security on six months notice, the agreement is otherwise of indefinite duration. Now that the OSI provisions have expired, the treaty will be verified primarily through the use of NTM. National technical means were the cornerstone of verification and will continue to be a highly effective tool for verifying compliance. If Russia's satellite systems continue to decline in number and capability, however, it could face future difficulties in verifying US compliance with this and other treaties.

The SVC will continue to meet as required. It can also be called into session at the request of one of the parties. The meetings have always taken place behind closed doors, so it is hard to say from the outside exactly how the body will adapt to its new role following the end of OSIs. The parties could, of course, voluntarily provide information beyond that legally required to confirm their continuing compliance. The SVC could also provide a medium for agreeing new OSIs or voluntary open displays if this was felt to be necessary. The SVC has been highly adaptable and effective at ensuring the treaty is implemented correctly. There is every reason to believe that it will continue to serve the cause of indefinite compliance well.

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[19] There were also a number of other small problems reported. See Stephen Iwan Griffiths, 'The Implementation of the INF Treaty' *SIPRI Yearbook, 1990*, Oxford University Press, Oxford, 1990, pp. 443-458.

[20] See Gennady Khromov, 'The Use of "Hera" Missile Violates the INF Treaty', Center for Arms Control, Energy and Environmental Studies, Moscow; see http://armscontrol.ru. 'Russia Urges U.S. to End "Hera" Ballistic Missile Development', *Xinhua News Agency*, 16 November 2000. See www.xinhuanet.com.

[21] See 'Insights of an On-site Inspector, *Arms Control Today*, vol. 18, no. 9, November 1988, p. 10.

[22] For example, Brigadier General Roland Lajoie, who was OSIA Director, said in an interview in 1990, 'I would like to have a little bit of latitude to let some of my team chiefs make minor procedural or technical adjustments based on the circumstances as they find them'. Cited in 'One to One' interview with Brig. Gen. Roland Lajoie, *Defense News*, 26 November 1990, p. 30.

CONCLUSIONS

The importance of the INF Treaty lies not just in what it did, but the manner in which it did it. While the treaty eliminated an entire class of nuclear weapons, including the 'Euromissiles' which were causing so much political discord in the West, it had a very limited impact on the superpower nuclear balance, eliminating only 5% of their arsenals.

One of the main achievements of OSIs under the INF Treaty has been in creating a model and procedures for OSIs generally. Successful implementation of the INF Treaty proved that OSIs could work, when many at the time argued that they would not. Testament to this is the fact that almost all subsequent arms control agreements have contained some element of OSIs, in particular START I, the CFE Treaty, the CWC and the 1996 Comprehensive Nuclear Test Ban Treaty (CTBT).

In addition, the treaty created personal relationships between the personnel of erstwhile adversaries that helped smooth the way for the negotiation and implementation of the more complex arms control agreements that followed.

The treaty also established dedicated verification agencies in the US and Soviet Union which brought all the necessary skills under one roof, institutionalised a voice for verification in each government and permitted investment in the necessary infrastructure. Agencies in both the US and Russia are now routinely involved in the verification and compliance of a large number of arms control and disarmament agreements.

As the On-Site Inspection Agency's third director, Brigadier General Gregory G. Govan, has said: 'The significant achievement of the INF treaty was that on-site inspection was really made to work, and all the treaties that came after it more or less followed the INF model'.[23] The impressive verification standards set by the INF Treaty have had, and will continue to have, a far-reaching impact on arms control and disarmament generally.

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[23] Interview with Brigadier General Gregory G. Govan, 'An In-Depth Look at On-Site Inspections', *Arms Control Today*, vol. 25, no.7, September 1995, pp. 16-17.

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