

**THE STRATEGIST AND THE WEB REVISITED:
AN UPDATED GUIDE TO INTERNET RESOURCES**

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FOREWORD

Every day of the "Information Age" makes more material available via the Internet. Yet simply "surfing the 'Net'," while perhaps enjoyable as recreation, is ill-suited for rapidly locating valid, salient information. This is particularly true for analysts or military professionals seeking to develop strategy, to research national security issues, or to provide policy advice. With the original edition of this essay in February 1996, James Kievit and Steven Metz began an effort to construct guideposts for strategic thinkers and practitioners to follow when travelling the "information superhighway." That such a "travel guide" is valuable is amply demonstrated by the rapidity with which SSI's stock of the original *The Strategist and the Web* has been exhausted.

Accordingly, the authors have "revisited" the Web and updated this guide for planners and researchers interested in the practice, problems, and policies of contemporary national security and military strategy. As with the first version of this essay, the authors conclude that the Internet still is not "a solution to the analyst's need for relevant, timely information," but they remain convinced that individuals and organizations must prepare themselves for the day when "an analyst's collection of Internet 'bookmarks' will be nearly as valuable as a rolodex of personal contacts is now."

The Strategic Studies Institute provides this update as a further contribution to the Army's preparations for the challenges which lie ahead in the "Information Age."

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SUMMARY

For analysts or planners attempting to craft appropriate, timely solutions to strategic problems, the ability to collect information rapidly and to evaluate its relevance and validity is a crucial skill. Computers linked via the Internet can offer timely access to millions of documents and files on a vast range of topics, and the number of documents available increases on a daily basis. But to make maximum use of the Internet as a research tool, researchers must understand it. And analysts trained in library, archive, and word-of-mouth research must learn where to look for salient electronic information.

Like its predecessor, *The Strategist and the Web Revisited* provides an Internet "Primer"--an introductory road map of the Internet explaining its most important features: the World-Wide Web (WWW), Usenet news groups, and electronic mail ("e-mail"). Then it examines numerous catalog and search engine, Department of Defense, U.S. Government information, think tank and professional journal, international organization and foreign government, and news and regional information Internet sources. From these it identifies both sites of *current* value to a strategic analyst, and those with the *potential* to become important resources after further development.

Today, although valuable, the Internet is not a solution to the analyst's need for relevant, timely information. Within a few years, though, an analyst's collection of Internet "bookmarks" will be nearly as valuable as a rolodex of personal contacts is now. The astute strategist will prepare for this. Only by exploring the web today and developing effective methods for finding and using electronic information, will he or she be ready when the Internet finally does make the leap from novelty to necessity.

To help make this exploration easier, Appendix A provides the URLs (electronic addresses) for all the sites reviewed in the essay. Alternatively, you can begin your exploration by visiting SSI's "Strategic Hotlist" at: <http://carlisle-www.army.mil/usassi/ssioutp/linkpage.htm>

THE STRATEGIST AND THE WEB REVISITED: AN UPDATED GUIDE TO INTERNET RESOURCES

Authors' Note:

This essay is a update of *The Strategist and the Web*, published by the Strategic Studies Institute in February 1996. Readers who are not familiar with the original are encouraged to read this entire essay. Readers acquainted with the original essay may want to skim or even skip the **Introduction** and **Internet Primer** sections and proceed directly to the **Internet Road Map** section for the updated reviews of Internet sites.

Introduction.

Information has always been the lifeblood of strategic analysis. Once it was difficult to acquire enough information to assess the security environment, monitor changing events (especially those far from the major media centers), and draw reasonable conclusions. Today, technology has changed things-- analysts now have access to a virtual torrent of information. But while the quantity of information is no longer a problem, assuring its timeliness and quality can be. For strategic analysts, the ability to collect information rapidly and to evaluate its relevance and validity is now a crucial skill.

To a large extent, the computer has become the tool of choice for strategic research. By allowing the nearly instantaneous transfer of information, computers certainly help assure it is timely. But computer-based research has its own set of problems. Analysts trained in library, archive, and word-of-mouth research must learn where to look for salient electronic information. The Internet offers a partial solution to this problem. Through it, nearly everyone with a microcomputer and a modem can easily access millions of documents and files on a vast range of topics. But the Internet is not a panacea for the problems of strategic analysis. To make maximum use of it, researchers must understand its strengths and weaknesses.

An Internet Primer.

The Internet is a network of millions of linked computers around the world. These can range from the simplest PC to supercomputers owned by universities and governments. The Internet is not centrally managed or controlled.¹ No one establishes rules for the type of material it contains.

Essentially, anyone with a computer and some relatively simple software can establish a "site" containing information that other Internet users can examine, download, or print. A few sites are "pay for use" or require a password, but the vast majority are open. This anarchy and fluidity leads to great variation in the quality of information on the Internet. It ranges from the useless and the banal to the indispensable and the insightful. It takes some skill to quickly distinguish into which category a site belongs, particularly since many of the most visually appealing and interesting sites are intellectually shallow while some of the most important sources of information are, to put it bluntly, rather boring to look at. For the most part, at present, style has won out over substance on the Internet--it contains many glossy magazines and slick brochures, but only a few weighty tomes.

In addition, the Internet is an extraordinarily fluid medium, literally changing by the minute. New sites appear at a breathtaking rate--major online Internet catalogs receive thousands of new listings every day. At the same time, many sites change addresses and others just go away. And because it only takes a few minutes at a computer to modify a site, data can change frequently. This means that mastery of Internet information is extremely perishable. A researcher away for even a few weeks may find a massive amount of new information during his next visit, but may also find that older data is no longer available. The Internet is less like a library where the holdings remain relatively constant than a public kiosk board whose information has a brief life span.

On top of the vast amount of new material entering the Internet, its structure and essence are also changing. The Internet was initially built by governments and universities as a research tool to allow the rapid exchange of data among scientists.² Today, most of its phenomenal expansion is fueled by commercial firms selling online access or marketing goods and services, and by individual subscribers. Advertising and "pay for use" sites have appeared. The look of the Internet has also changed dramatically. Text-only "gopher" sites have largely been replaced by graphics-laden and sometimes video-enhanced "web pages."* The transformation will continue. This is a mixed blessing. More of value is available on the Internet every day, but there are also more distractions to wade through while getting to it.

Three features of the Internet are most relevant for

strategic analysts: the World-Wide Web, Usenet news groups, and electronic mail ("e-mail"). E-mail is simply a means of interpersonal communication that falls somewhere between the immediacy of a phone conversation and the more thoughtful but slower exchange of ideas previously done by writing letters and memos. The specifics of using it vary greatly according to the mail software being used. Besides one-to-one correspondence, e-mail multiple address lists can be used to generate focused discussion groups with specific membership for specific topics.³ Usenet news groups are collections of individuals interested in a particular topic who post messages, questions, problems, or issues on the Internet and reply to those left by others. The messages can be stored at an Internet site that participants

*Many of the terms used in this essay can be found in the glossary at Appendix B.

access using web browser software like Netscape or Internet Explorer, or they can be distributed by e-mail. News groups are, in effect, electronic discussions and debates. While there are thousands of them dealing with every conceivable topic, most of those focusing on strategic, political, and military issues are relatively unsophisticated, making them of limited value for serious research. There is great potential, though, for limited-access news groups restricted to true experts.⁴ This is probably one wave of the future.

The world-wide web (also known simply as "the web"), which is based on "home pages" combining text, graphics, links to related sites, and, increasingly, audio and video, has become the most popular and rapidly-expanding element of the Internet. In a sense, the world-wide web is the Internet's library and can be a powerful source of timely information. But there are no librarians monitoring either the categories or the quality of information available. More than any other part of the Internet, the web requires researchers to develop effective, personalized techniques for rapidly finding appropriate data and assessing its quality. This is not an easy task for busy national security specialists and strategic analysts.

Internet Road Map.

To guide strategists unfamiliar with the byways, commercial stops, and remainder areas of the information superhighway, the rest of this essay offers an introductory road map of the web, suggesting sites of current value and noting others with the potential to become important resources.

Catalogs and Search Engines. Since one of the major challenges for users of the world-wide web is locating appropriate material, some of the most useful sites do not provide actual data but instead offer ways to find and connect to other sites. These are the Internet's catalogs. Their most valuable resources are collections of "links." Links are special text (usually colored differently from the rest of the text and underlined) or pictures which automatically transfer the user to another Internet site when they are clicked on using a mouse. For instance, while connected to a computer in Switzerland or Australia, clicking on a link to the Strategic Studies Institute will temporarily disconnect the user from the overseas computer and connect him to the one at Carlisle Barracks, Pennsylvania, where the Strategic Studies Institute home page is kept.

Although others like *EiNet Galaxy* are rapidly closing the gap, the most extensive and powerful catalog is *Yahoo*, which began as the project of computer scientists at Stanford University but is now a commercial firm.* This change means that

*The names of specific Internet sites are in italics. The electronic addresses (or URLs) used to access the sites discussed are listed in Appendix A.

Yahoo has added a few fairly innocuous advertisements, but presumably the financial backing helps assure that the catalog remains well-maintained. *Yahoo* contains electronic links to thousands of Internet sites on every conceivable topic, including many political, economic, and military ones. Of its fourteen sub-catalogs, the ones on *Government*, *Regional*, and *News* sites are most likely to aid strategic researchers. The *Regional* sub-catalog, for example, provides access to the *CIA World Factbook*, to the *Country Studies/Area Handbook Program*, and to thousands of links related to 221 countries from *Afghanistan* to *Zimbabwe*. And the *News* sub-catalog provides access to hundreds of magazine, newspaper, and news wire links.

While *Yahoo* has its own search tool, some of the dedicated Internet search engines are even more powerful and flexible. Most will scour the web using parameters provided by the user and then provide a list of "hits" that meet the conditions. The user can access the hits by clicking on the links in the report provided by the search engines. *InfoSeek*, *WebCrawler*, *Excite*, *Alta Vista*, *Open Text*, and *Lycos* provide similar functions. Analysts should use multiple search engines during research, since the same search string will achieve astonishingly different results depending on the search engine employed.⁵ Increasingly, "meta search" services like *Starting Point* can be used to connect to all the major search engines, thus making it unnecessary to access each one individually.

Many of the catalogs including *Yahoo* provide a list of new Internet sites. The *Net Scout Services* offers even better ways to do this. It includes a weekly newsletter called the *Scout Report* that summarizes new Internet resources, and a service called *Net Happenings* that lists about 30 new sites each day. Both of these can be accessed directly over the web, or received by e-mail. Information on e-mail subscriptions is available at the web sites. *Netsurfer Digest* is a similar weekly compilation of new sites delivered by e-mail. *Internet Resources Newsletter* is not distributed by e-mail and must be accessed at its web site, but it provides a wealth of information for serious researchers rather than catering to those seeking mostly entertainment on the Internet. It is a British site, so British resources dominate the listings, but those from many other countries are also listed and assessed. Some other Internet sites such as *USA Today* and *Cable News Network* provide short lists of new sites, but their focus is more on home pages that are entertaining or popular than on those that provide research resources.

U.S. Department of Defense Sites. Department of Defense organizations are extensively represented on the Internet, which is not surprising since the concept began partly as a component of the government's "survivable communications system" initiative. But despite the numbers and logical structures of most Department of Defense web sites, most tend not to be of great value to the strategic researcher. This is because they are simply electronic brochures offering a basic description of an organization, its mission, and its location or the opportunity to interact in a limited way administratively.⁶ Only a few Department of Defense sites offer research material on national security strategy, policy, or military strategy.

DefenseLink is an entry point to Internet sites operated by the Office of the Secretary of Defense, the armed services, and related defense agencies. More importantly, *DefenseLink* provides a means to search and download Department of Defense directives, obtain transcripts of important speeches, and connect to other sites dealing with specific military operations (for example, *BosniaLink*). *DefenseLink* is hindered by the absence of a directory of key personnel in the Office of the Secretary of Defense, but does have the potential to grow into a key resource. Two related sites, the *Secretary of Defense* and the *Unified Commands*, are not particularly useful, largely providing fact sheets on their organizations. The similar *Joint Chiefs of Staff* site does provide online access to two important documents: the current *National Military Strategy* and *Joint Vision 2010*. And the *Defense Intelligence Agency* site now provides access to several publications in full text online.

Each of the military services has a centralized directory of its Internet sites. The Army home page, *America's Army*, is a catalog or "hotlist" of the hundreds of Army home pages. The sites are indexed alphabetically and by subject area. Most of these are of little interest to a strategic analyst; there are currently only two entries listed under "strategic planning," one under "strategy," and one under "strategic defense." Recent speeches by senior Army leaders, while not available via the Army home page, can be found via the DoD's *ArmyLink*. *AirForceLink* provides access to numerous Air Force organization sites. Again, few of these offer information for strategic research. Some do include a list of contacts and a few offer e-mail addresses. But *AirForceLink* frequently seems very slow to load, so skip it and go directly to the more useful *AirForceLink News* and *Library* sites. The first offers a searchable data base of recent news releases, and the second offers online access to a significant

number of airpower related publications. *NavyOnLine* provides links to other Navy organizations, and access to ASCII text versions of recent Navy press releases online. Entering "strategy" into the *NavyOnLine* search index resulted in 21 "hits." Although most turned out to be of limited utility (such as a long-range plan for the development of the Naval Undersea Warfare Center), one led to a potential "gold mine" for a researcher interested in U.S. military strategy. This is the *OPNAV N513 Strategy and Concepts Branch* site which provides access to at least 20 Army, Navy, Air Force, and Marine Corps "Strategic Policy Documents." Finally, *MarineLink* offers the usual links to Marine Corps organizations, and access to several U.S.M.C.-related publications. And, although it still contains some "click here" statements unconnected to any actual links, the "user friendliness" of its important "U.S.M.C. Concepts and Issues" document has been much improved over its earlier online version.

The *Defense Technical Information Web* is an alternative starting point for Department of Defense Internet sources and has a useful link locator page. The *Army Knowledge Network*, originally intended to be a conduit of all Army electronic information, thus far merely provides identification of those developing the structure. One of its subordinates, the *Automated Historical Archives System*, was to develop, maintain, and distribute online the Army's electronic, multimedia archives for post-Vietnam contingencies, operations, peacetime preparation for war, and planning for the future. This should be an ideal source for the strategic analyst. Unfortunately, it is currently in the midst of merging with the Army's *Center for Army Lessons Learned* (CALL). This is both likely to delay electronic availability of information and to increase the operational and tactical focus of material provided.⁷ In addition, current plans appear to be to restrict access to CALL's data base to DoD and specially identified "need to know" personnel.

The *Marshall Center*, which is the Internet page of the United States European Command's George C. Marshall Center for Security Studies, is well-organized and provides useful information about Center staff. It also offers online access to some publications, documents, and conference reports dealing with European security. The Army's *Foreign Military Studies Office*, which is charged with assessing regional military and security issues through open source media and direct contact with foreign military and security specialists, provides online access to its publications on strategic issues and military operations other

than war, including a few translations of foreign publications. The *Army Research Laboratory Publications* site has information on the current and projected technology innovations in its "Annual Review" documents. *TRADOC PAM 525-5: Force XXI Operations*, provides the Army's "conceptual foundations of War and Operations Other Than War in the early decades of the 21st Century."

Finally, one might expect the Internet sites of the high-level military colleges--the Department of Defense's academics--to prove especially useful for research. This is not entirely true. The *National Defense University* (NDU) does provide a well-organized link page to its affiliated colleges and organizations. The home pages of NDU's subordinate colleges and organizations vary in quality. The only items of use to researchers on the *Armed Forces Staff College* site are bibliographic listings from its library links. The rest is the sort of descriptive information on courses and departments found in any college catalog. The faculty directories of the *National War College*, the *Armed Forces Staff College*, and the *Industrial College of the Armed Forces* are organized strictly alphabetically, with no quick way to determine an unknown individual's area of expertise. The *Industrial College of the Armed Forces* page still indicates that it eventually intends to provide access online to ICAF faculty and student publications but the links included as "under construction" were last updated in April 1995! The most valuable link from the *National Defense University* is to its *Institute for National Strategic Studies*. This well-organized page includes a searchable index (which provided 21 hits related to "roles and missions" and 35 related to "national security policy"), the ability to view the full text of published studies online, conference and symposia information, and a staff directory including biographical data, contact phone numbers, and e-mail addresses.

While its graphics make it slow to load, *Air University* is a major innovator in at least one area: it provided an interactive opportunity, via its link to *2025*, to explore and share ideas on air and space capabilities for the future. Although the formal study has been completed, and the *2025 Final Report* is available online, individuals can still submit thoughts on the future of airpower using entry forms provided. *AU Press* is valuable for its book and publications listings of airpower-related material. One shortcoming is that currently the listings provide summary and bibliographic information only; there is no capability to obtain full text online although hard copy ordering information

is supplied. There is also both an author and title index to recent airpower publications. The graphics of *Air Chronicles* makes this site slow to load but it does provide access via its "Contributor's Corner" to otherwise unpublished essays and articles including some with strategic relevance. The more recent, however, cannot be viewed with a normal browser but only with "Adobe Reader" software--which *Air Chronicles* provides via a downlink if you have sufficient free disk space. The files of other articles are very large, up to 1MB, so be prepared to wait for them to load. *Air Chronicles* also links to *Airpower Journal*. At this site, some recent articles and short essays can be viewed online and all can be downloaded.

The existing Internet site of the *U.S. Army War College* (USAWC) is primarily public affairs oriented. Only the *Department of Corresponding Studies* of its teaching departments provides even faculty information. Of more value to the strategic researcher are the college's associated institutes. The *Center for Strategic Leadership* (CSL) and *Peacekeeping Institute* (PKI) home pages are well laid out. While basically providing organizational information, the CSL page does offer a few studies online and the PKI page provides a few documents and a useful hotlist of peacekeeping-related links. The *Military History Institute* offers several searchable photographic archives and some bibliographic material, but unfortunately there is not yet online access to even a small portion of the Institute's holdings. The *Strategic Studies Institute* site has the usual organizational material and publications catalog, but also provides full text of many of its newer analytical studies, conference and symposia information, a staff directory with biographical data, phone numbers, and e-mail addresses, and a collection of links to other Internet sites of value for strategic research. Its major shortcomings are a lack of a searchable index to its publications, some delay in keeping its outreach and faculty directory information up to date, and the fact that many older studies still are not available online. A recent addition to the USAWC pages is *Parameters*, the Army's senior professional journal. This site provides a complete index of past articles (searchable if you are using Netscape), full text of selected articles and review essays from recent issues, and information on subscribing or submitting manuscripts for possible publication.

The *Naval War College* is the most recent senior service college to arrive on the Internet. Unfortunately, besides a limited telephone directory and organizational, but not

individual, e-mail directory, the site as yet offers nothing of interest to a strategic analyst or planner. The *Naval Postgraduate School* focus is on the technological aspects of operations research and systems analysis. The school's Department of National Security Affairs is listed, but cannot be accessed.

Other U.S. Government Information Sources. Many Executive branch agencies have established world-wide web home pages with basic, brochure-level information about their organization and function, but, as with the Department of Defense, few of these can serve as a resource for analysts or researchers. The *National Security Agency* and *Advanced Research Projects Agency* (ARPA) are examples (although the ARPA site does offer some press releases and testimony). Similarly, the *National Technical Information Service* site is a catalog of the agency's vast holdings of scientific, technical, and business-related information, but little of it can be read online, downloaded, or printed. If it were, researchers would gain greatly. The *White House* site is one of the most popular on the world- wide web. It is glitzy and fun, but offers no material of value to strategic analysts.

The *Department of State* is a frustrating location on the web. For a strategic analyst dealing with U.S. foreign policy, this site, which provides foreign policy news, speeches, statements, and reports, could be an extraordinarily useful tool for keeping abreast of official policy. But while it has been improved recently by the introduction of a web home page and a search engine, it remains awkward to use and difficult to access. Much of the key policy information remains accessible only via "gopher" technology. To get a hard copy of a one page story from the *Department of State Dispatch*, users must print the whole document which sometimes runs over 50 pages. And posting of the *Dispatch* is slow, the most recent version available online being several weeks or even months old.

A few other Executive branch sites do include important research material. The United States Information Agency actually has two sites, each valuable in different ways. The *United States Information Agency Home Page*, designed for domestic consumption, offers via its *Foreign Commentary on U.S.* selected excerpts and translated articles from major foreign newspapers and magazines. But it is the *United States Information Agency International Home Page*, designed for overseas consumption, which definitely should not be overlooked by U.S. analysts. Its *Electronic Journals* provides access to current and back issues of five publications (*Economic Perspectives*, *U.S. Foreign Policy Agenda*, *U.S. Society*

& Values, Global Issues, and Issues of Democracy), although once again Adobe Acrobat is the required reader. Even more useful is its *Daily Washington File* which, although many of its sub-elements are gopher links, provides an extensive collection of time-sensitive policy statements on economic, diplomatic, and security issues. Similarly, the *Voice of America* site, having corrected its previous link problems, is a potential gold mine with its ability to search through 2 years of broadcasts.

The U.S. Congress has both good and mediocre Internet sites. The *Senate Armed Services Committee* and the *House National Security Committee* sites simply list members and provide contact information. The *Congressional E-mail Directory* is a good, searchable resource. The general U.S. Congress site--named *Thomas* after President Jefferson--is one of the most important pages on the Internet for Americans interested in political affairs. It provides the full text of legislation, a searchable transcript of the Congressional Record, bill summaries and status reports, information on hot legislation organized by topic, a copy of the U.S. Constitution, and a useful primer on the lawmaking process. It also includes links to other congressional sources, including senators and representatives with e-mail or home pages. With improvements in its search engine, *Thomas* could move from a very, very good site to a truly superb one. The *Library of Congress* web page also combines tremendous potential and serious shortcomings. It may eventually be the premier site on the Internet for researchers, but now offers mostly basic information about the Library, a few links to other sites, and searchable catalogs. Once an analyst finds a citation from the catalogs, he or she must then go to a library to retrieve the material rather than having online access to it. An extremely well-designed site providing a powerful search tool for legislation and other congressional documents is *GPO Access*. Public access to these documents is either from a Federal Depository Library or directly from the Government Printing Office. *CapWeb* is another source of congressional information, but is not affiliated with the government.

Research Organizations and Professional Journals. Several gateways deal specifically with think tanks and research organizations focusing on world politics and security policy. *International Security Network* and *IANWeb* are good examples. In fact, the Swiss-based *International Security Network* is currently the single most useful site on the world-wide web for national security analysts and researchers. Its hotlist of think tanks, universities, government organizations, and news groups is as

exhaustive as possible in such a fluid medium. It also provides a wealth of other information on the structure and lexicon of the Internet and a few documents that can be downloaded. The well-organized *National Security Website* created by the Foreign Policy and Defense Studies Department of the Washington, DC-based Heritage Foundation also has a very useful hotlist, and provides full-text online access to many publications and documents. *SACIS* is a truly outstanding site with links to the United Nations, various U.N. agencies, a range of other international organizations, data bases of international law documents, and a few other international affairs pages. It, along with the *United Nations Scholars' Workstation*, offers better ways to access United Nations' material than the U.N.'s own home page. Some useful links are also found in the *Stanford Center for International Security and Arms Control*. The *American Studies Web* is an entry point into the domestic political, social, and economic arenas, and provides a searchable index. The *Electronic Headquarters for the Acquisition of War Knowledge* (EHAWK) is primarily a gateway to Internet locations dealing with military history, although it does include links to military-oriented news groups and e-mail discussion groups which might have relevance to contemporary issues.⁸ The most comprehensive "military" gateway is *Rongstad's Military Links*; but despite its logical organization be prepared to sort wheat from chaff.

Another type of gateway is found in the *American Universities* and the *Colleges and Universities* sites. These provide links to many universities around the world. Most of these, in turn, have faculty e-mail directories which a researcher can use to contact experts in the field he or she is analyzing. The university home pages vary greatly in quality. Some, like Columbia University, make it easy to identify faculty experts in specific fields and send them e-mail. Others, like the University of California at Berkeley, are difficult or impossible to use, either failing to list faculty expertise and e-mail addresses, or requiring the user to go to two or three separate sections of the site to locate and contact experts. Frequently, individual staff or faculty members at an institution have useful home pages. An excellent example is the *International Affairs* page created as a personal project by Nathan Gilliatt. His extensive hotlists of interest to researchers include brief descriptive information about each site, something many other lengthy hotlists could benefit from.

As might be expected, many major think tanks and organizations dealing with security and military issues approach

the Internet as a marketing device rather than a research resource. Their sites are primarily online catalogs offering a basic description of the organization and information on ordering and purchasing their products. An example is the *International Institute for Strategic Studies* (IISS), publisher of vital documents like *The Military Balance*, *Strategic Survey*, *Survival*, and the *Adelphi Papers*. Similar sites are the *Center for Strategic and International Studies* (CSIS), *Jane's Information Store*, *Stockholm International Peace Research Institute* (SIPRI), *Center for International Security and Arms Control* (CISAC), and *Association of the United States Army*. A few others such as *RAND*, the *Stimson Center*, and the *Hoover Institution on War, Revolution, and Peace* offer a bit more, including detailed information on their research programs and some archives. The *RAND* page also offers a basic information sheet on the Arroyo Center, its Army research division, and some other elements like the Center for Asia-Pacific Policy. The site does make it difficult to contact specific researchers. Unless users know who they are looking for from the start, they must wade through the *RAND* pages to find the name of a specific researcher, and then go back to the beginning to search an e-mail directory. More advanced Internet pages provide a direct mail link from their directory of experts.

If some prestigious think tanks like CSIS, *RAND*, IISS, and SIPRI offer little usable material over the Internet, others often give more online. The *CATO Institute*, for example, provides a searchable index to its publications library, and more than 260 full text studies online. Some University-affiliated think tanks such as the *Jaffe Center for Strategic Studies* (JCSS), the New Zealand-based *Centre for Strategic Studies* (CSS), the *School of Advanced International Studies* (SAIS), and the *John F. Kennedy School of Government* also offer more actual full text online reports and studies. These sites can be of tremendous value to the electronic researcher interested in focused regional or topical material.

In an attempt to counterbalance the "military-industrial complex," some defense spending watchdog groups have established well-designed Internet sites. These include the *Center for Defense Spending* (which also offers the latest issue of their publication *Defense Monitor*) and the *Military Spending Working Group*. While these can be unabashedly critical of the defense establishment, they provide a useful alternative perspective which a strategic analyst can use to gain a balanced understanding of the defense budget debates. A similar site, not

directly focused on budgetary issues, is the *Project on Defense Alternatives*.

Other Internet sites provide information on a specific national security topic. These include *MILNET*, with open source data on worldwide military and intelligence structures, weapons, and force strengths; the *Program on Peacekeeping Policy* that includes news, reports, and links on peacekeeping; and the *Carter Center* with information about the organization founded by the former president and its involvement in Third World democratization and development. Similarly, the *Center for Nonproliferation Studies* provides material on the spread of weapons of mass destruction and their associated technologies; *Democracy Net* covers the work done around the world by the National Endowment for Democracy; and the *United States Institute of Peace* gives a collection of links to sites, news groups, and other resources concerned with conflict resolution. The British American Security Information Council site, *BASIC*, provides information relating to "international security policy in Europe and North America." Press releases and short analytical papers are available online, larger studies must be ordered. For those interested in intelligence organizations and issues, *IntelWeb* offers valuable descriptions of the intelligence communities of most nations, and Loyola University provides two excellent sources in its *Strategic Intelligence* and *Military Intelligence* hotlists. On a related but distinct issue, the *Institute for the Advanced Study of Information Warfare* and *Information Warfare on the Web* are valuable attempts to provide basic information and links on a subject of rapidly increasing importance.⁹

Among the "single issue" sites, the *Joint Services Conference on Professional Ethics* stands out. It provides a forum for military officers and academics to discuss ethical issues relevant to the military and includes a posting of a monthly ethical problem with comments and discussion from other participants. It also offers papers from an annual conference. This is not truly a strategic site--its greatest use is probably for cadets and junior officers still constructing a professional persona--but it is so well done that it vividly illustrates the potential of the Internet.

The Internet also provides strategic analysts a way to keep up with key academic journals covering world politics and security issues. A number of them have home pages providing subscription information, the contents of the most recent issue, and usually a few articles that can be read, downloaded or

printed. Examples include *Washington Quarterly*, *Foreign Affairs*, *Foreign Policy*, *Journal of Democracy*, *International Security*, *International Organizations*, *Political Science Quarterly*, *Fletcher Forum*, and *World Politics*. Some important journals of opinion which cover world politics and national security like *Atlantic Monthly*, *National Review*, and the *New Republic* also provide online versions of the current issue and sometimes recent back issues as well.

International Organizations and Foreign Government Sites.

A few foreign governments are moving rapidly to provide Internet access to information on their foreign and defense policies, but they tend to be highly concentrated geographically. There are virtually no government web sites of value in Latin America or the Middle East. Some governments in Eastern Europe appear interested in establishing Internet sites, but their pages are often difficult or impossible to access. In Sub-Saharan Africa, the *African National Congress* site is very good and provides South African news as well as policy statements, but is the sole representative from the region. Somewhat more surprisingly, the Japanese *Ministry of Foreign Affairs* page is one of the few official sites in the Asia-Pacific region that offers much for researchers. It includes summaries of current issues, press conferences, major speeches and articles, and the diplomatic blue book. Also from Japan is *NIRA's World Directory of Think Tanks*. The directory provides information on 232 think tanks in 64 countries: contact information, main areas of research, research findings, staff information, and other material.¹⁰ Unfortunately, however, the directory is not a hotlist--it does not provide direct connection to the actual organizations. Elsewhere, the *Australian Defence* and the Canadian *Department of National Defence* pages are good, but deal more with recent reorganizations than with strategy or world affairs. The Canadian Forces College provides a solid collection of military links on its *Peace and Security* page.

Western European governments have established some very useful web sites, including the German Foreign Office's *Auswärtiges Amt* (which also includes a link to the English-language *German Information Center*), the Swiss *Zentralstelle für Gesamtverteidigung*, and the *France Defence* site. The British *Ministry of Defence* home page shows the potential of these types of resources. It contains a summary of the 1995 United Kingdom "White Paper," and the full text of the 1994 paper. In addition, the *Ministry of Defence* page contains a comprehensive press release information section, including access to the U.K.

"Central Office of Information Internet Services"--which provides a searchable listing of all press releases by all U.K. government organizations. *UK CALS NEWS*, another link on the *Ministry of Defence* page, provides information on the U.K. defense acquisition process and individual current program status.

Some important international organizations also have Internet sites. The *World Bank* includes useful reports and documents on Third World development. The *United Nations*, while still maintaining its gopher site, has also established a new web site. This provides general organizational information, access to treaty information via its *International Law* link, and full text search of Security Council resolutions, but still only gopher access to General Assembly resolutions. The latter are listed only by number and date rather than subject, so researchers must know precisely what they are looking for in advance. A hotlist to information regarding U.N. organizations is found at the *UNITED NATIONS System of Organizations* site. The total package of U.N. sites, if updates continue, could be some of the most useful locations on the Internet for strategic analysts. The text of many treaties can be found at the *Multilateral Treaties* gopher of Cornell University. Many regional and specialized organizations such as the *Organization of American States* and the *Organization for Economic Cooperation and Development* have also built web sites, but most of them only provide basic information about the organization's structure and mission rather than the text of resolutions and other material of interest to an analyst.

Europa, the web site of the European Union, is by far the most useful of the regional organizations' sites. It includes policies and agendas as well as basic organizational information. The newly-opened *NATO* site is an absolute gold mine of material, including the text of basic documents, communiques, press releases, speeches, and studies. It also offers information on seminars and workshops, and has a large collection of documents on the Yugoslavia crisis, both from NATO itself and from the United Nations.

News and Regional Information. The availability of world news on the Internet is expanding. The *World News Connection* provides news stories from around the world. It is particularly crucial for regionalists dealing with regions overlooked by the mainstream media. Essentially it is an online version of the Foreign Broadcast Information Service (FBIS) reports. The down side is that users--even government ones--must pay for the service. However, the subscriptions are flexible, offering both

short-time access for researchers involved in a single project and longer terms for individuals or organizations with a recurring need. Interestingly (perhaps ominously as far as some researchers are concerned), it appears *World News Connection* is intended to totally replace paper subscriptions of FBIS. The Reuters news wire is provided in a number of spots including *Yahoo*, *Excite*, and commercial service providers such as America Online (AOL). AOL is particularly valuable because it gives the full Reuters wire rather than selections like *Yahoo* and *Excite*. This can be important for research on areas of the world like Africa that do not garner much attention from the mainstream media. The *Associated Press* is also available, but stories only stay online for a very short period of time, there is no archive, and coverage of world events is less comprehensive than the full Reuters wire (although similar to the shortened version of Reuters found on *Yahoo* and *Excite*). The *Cable News Network* posts transcripts of many of its broadcasts as well as audio and video clips. These cover many topics but not in much depth. *National Public Radio* also provides transcripts of newscasts and some feature stories. The *USA Today* page provides a truncated version of the paper. The *New York Times* site includes the full paper.

Coverage of specific parts of the world varies by region. There is much material on Europe, including the excellent *OMRI (Open Media Research Institute) Daily Digest* which covers the former Soviet Union. There are some good Asian news sites. Unfortunately, *The Asian-Centered Media Perspective: An Asian Reading of Asia*, a hotlist of Asian news sites, has many out-of-date URLs. In most cases you can still eventually reach the desired source via intermediate "we have moved" pages, but you must be patient. For Africa, one site definitely worth a visit is *Contemporary Conflicts in Africa*, which provides extensive coverage on the prevention, management, and resolution of conflict throughout the continent. Although some pages are graphics intensive, they seem well-organized and load quickly, and the reports, maps, and databases available make up for the eyestrain the occasionally garish color combinations may cause. The Republic of South Africa is well-covered on the Internet: *News Briefings from the ANC* publishes nearly a hundred news stories a day from the South African press. Coverage of Latin America and the Middle East is thin, although the *Central American UPDATE* and *IGCC Middle East Information Resources* provide some coverage. The best way to find specific regional news sources is through the outstanding collection of links on the *World News Index*. *Yahoo* and the *International Security Network* also offer links to some regional news providers.

Conclusions.

Is access to the Internet a necessity for contemporary strategic analysts? With the possible exception of e-mail access, probably not. Despite its rapid expansion, the world-wide web is still in its infancy. The bulk of information on it still is brochure-level and most web sites are marketing devices rather than sources of data. Analysts wading into the web for the first time will find it a swamp. Not only is a small proportion of the available information truly useful, but what is useful tends to be badly organized. Nearly all relevant information of value can be found elsewhere in printed form. In many ways, the web is for a national security professional as a microwave oven is for a cook. A cook with plenty of time and a well-stocked kitchen doesn't need a microwave. Without these, though, a microwave can be crucial. So too with the web. A strategist with few time pressures and access to a well-stocked library doesn't need the web. Strategists facing time pressure or who don't have a well-stocked library available will find it more useful.

Today, the Internet is far from a mature resource. Users and information providers are still experimenting to find out what works and what doesn't. Change continues to be extensive and rapid. New resources and methods appear and others fade away on a daily basis. Within a few years, though, presence on the Internet is likely to stabilize somewhat. Although contemporary providers of information, with the exception of a handful of electronic magazines ("e-zines" or "cyberzines"), see the web as a supplement to conventional publishing and distribution rather than a substitute for it, eventually there may be vital information on the web not available in any other medium. FBIS's giving way to *World News Connection* may be the first step in that direction. If--more likely when--this happens on a large scale an analyst's collection of Internet bookmarks will be as valuable as a rolodex of personal contacts is now. The astute analyst will prepare for this. By exploring the web today and developing effective methods for finding and using electronic information, he or she will be ready when the Internet finally does make the leap from novelty to necessity.

ENDNOTES

1. The "Network Information Center" funded by the National Science Foundation probably comes the closest to "controlling" the U.S. portion of the Internet, in that it is responsible for

the top-level domain database for registration of domain names and Internet Protocol numbers. This database matches "carlisle-www.army.mil" (something a human can, hopefully, remember) with the IP #144.99.192.240 (which few humans could give meaning to, but which is essentially for the correct routing of bits and bytes). But once NIC has agreed to an "address" its "control" of anything related to that address effectively ceases.

2. For more information on the creation and structure of the Internet, see: "Architecture of the Internet" at <http://www.boardwatch.com/isp/archit.htm>; also "History of the Internet" at <http://www.boardwatch.com/mag/95/jun/bwm1.htm>. These two articles, originally published in Boardwatch magazine, cover the technical aspects of the 'net in reasonable detail, but are understandable (as well as occasionally humorous) enough for technophobes.

3. J. Leland at RAND's Arroyo Center has used this technique.

4. For example, the Naval Postgraduate School in Monterey created a news group focused on discussion of command, control, communications, computers, and intelligence (C⁴I) issues, primarily involving professionals in the field.

5. For example, a search string of "military strategy, national security policy" returned the following diverse results on September 26, 1996: Quantity of documents: *zero* (Magellan) to *2,037,522* (Excite). Quality (judged by top ten documents retrieved): *Excellent* think-tank and government strategy-related publications (AltaVista and Excite) to *weak* National Military Park guides (Lycos).

6. These pages are not unimportant to the public or the concerned organizations, but do not materially assist an analyst researching a strategic question. Some are excellent sources for researching tactical, operational, or administrative issues, however. Examples include *TRADOC*--the U.S. Army Training and Doctrine Command--and *U.S. Military Academy*.

7. This is because CALL has traditionally had a tactical/operational focus. With a few exceptions its target audience has largely been the maneuver and support units of the field army, rather than the strategic planning community. As an example, the *Center For Army Lessons Learned* furnishes an index to some Army branch publications. These, while of only limited

interest to the strategist, are valuable for those more interested in the operational or tactical levels of combat.

8. Both of the authors believe familiarity with and understanding of historical events and trends are crucial to developing valid contemporary strategies and policies, and they make use of well-organized sites such as the *Center of Military History* [<http://www.army.mil/cmh-pg/default.htm>]. For this endeavor, however, our focus is on sites which primarily provide contemporary, rather than historical, strategic material.

9. Analysts should also be aware that not everything useful on the Internet will be found in "obvious" locations. For example, another excellent document related to information warfare was discovered at a *Computer Security Institute* site [http://www.digpath.com/news/10_13_95/1tech003.html].

10. The current directory was compiled in 1993, so some of the information is probably outdated. A 1996 version is "under construction."

APPENDIX A

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Internet Sites.

The method for accessing the Internet sites listed here will vary according to the web browser used. To open a site with Netscape, one popular browser: either click on the "Open" button, pull down the "file" menu and select "open location," or hit control-O. Then type in the URL (electronic address) provided. Remember that URLs **are** case-sensitive!

2025 <http://www.au.af.mil/2025/2025home.html>

2025 Final Report <http://www.au.af.mil/au/2025/>

Advanced Research Projects Agency <http://www.arpa.mil/>

Afghanistan <http://www.yahoo.com/Regional/Countries/Afghanistan/>

African National Congress <http://www.anc.org.za/>

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<http://www.dtic.dla.mil/airforcelink/pubs/>

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<http://www.arl.mil/EA/Publications.html>

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CATO Institute <http://www.cato.org/home.html>

Center for Army Lessons Learned
<http://call.army.mil:1100/call.html>

Center For Defense Information <http://www.cdi.org/>

Center for International Security and Arms Control
<http://www-leland.stanford.edu/group/CISAC/>

Center for Nonproliferation Studies <http://cns.miis.edu/>

Center for Strategic and International Studies
<http://www.csis.org/>

Center for Strategic Leadership <http://carlisle-www.army.mil/usacsl/>

Central American UPDATE <http://www.us.net/cip/96013tx.cau>

Central Intelligence Agency <http://www.odci.gov/>

Centre for Strategic Studies <http://www.vuw.ac.nz/css/>

CIA World Factbook (via Yahoo)
http://www.yahoo.com/Regional/CIA_World_Factbook/

College and University Home Pages
<http://www.mit.edu:8001/people/cdemello/univ.html>

Congressional E-mail Directory

<http://www.webslingerz.com:80/jhoffman/congress-e-mail.html>

Contemporary Conflicts in Africa

<http://www.synapse.net/~acdi20/welcome.htm>

Country Studies/Area Handbook Program

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Daily Washington File

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Defense Intelligence Agency <http://www.dia.mil/>

Defense Link <http://www.dtic.dla.mil:80/defenselink/>

Defense Technical Information Web

<http://www.dtic.dla.mil/dtiw/>

Democracy Net <http://www.ned.org/>

Department of National Defence <http://ww.dnd.ca/> [dnd.htm](http://ww.dnd.ca/dnd.htm)

Department of State <http://dosfan.lib.uic.edu:80/dosfan.html>

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gopher://gopher.eneews.com/11/magazines/alphabetic/all/int_security

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APPENDIX B

GLOSSARY

Bookmark. All software for accessing the world-wide web offers the user a means of placing a bookmark at a site to make it easier to find in the future. Since the user may have followed many links to arrive at a site, it is vital to bookmark those that may be of use. A well-organized collection of Internet bookmarks will become an increasingly valuable asset for strategic analysts.

Gateway. A web site that offers links to other web sites rather than providing information or data on a topic. See also "hotlist."

Gopher. A predecessor of the world-wide web. A menu-driven system offering text only. Users of the web can access gopher sites and retrieve information.

Home Page. Usually the first body of information provided when accessing a web site. Similar to entering the reception area of an office building with a receptionist offering directions to desired locations. Provides basic information about the organization or individual creating the site and usually links to other information at that site or at related sites. Anyone with access to an Internet server can create a home page, so they range from personal pages providing information about the individual to those run by government agencies or major corporations.

Hotlist. A web page that consists almost exclusively of links to other web pages.

Internet (the 'net). A system connecting millions of computers around the world. It is not centrally managed or controlled.

Links. Most web pages include graphics or "hypertext" (often displayed in a different color than the rest of the text and underlined) which, if clicked on, transfer the user to another body of information within the web page or connect them to another web page, sometimes in a different part of the world. By following such links, a user can find a variety of information sources. Following links is also known as "browsing" or "surfing"

the 'net.'"

USENET News Groups. Discussion groups built around a particular topic. Some are managed, others are not. Groups take two forms: e-mail groups where subscribers receive comments and postings from other users, or bulletin boards which users access and then read posted messages or post their own.

Search Engine. A computer program resident at a web site that searches for other web sites using parameters provided by the user.

Server. A computer connected to the Internet. Users cannot directly dial-up the Internet using a modem, but must gain access through a server. Many government offices, universities, and large businesses provide access for their employees. For access at home, a user can either subscribe to one of the commercial online services such as America Online, Compuserve, and Prodigy, which provide Internet access in addition to their other features, or to one of the dedicated Internet server companies located in most cities.

URL (uniform resource locator). The electronic "address" of an Internet site. world-wide web URLs tend to begin "http://www . . . " The first part of a URL indicates the type of access, the second part the name of the computer where the resource resides, and subsequent parts the actual document. Every character on a URL must be entered correctly to access a site. An American URL with an extension of ".edu" is an educational site, ".mil" is military, ".gov" is government, ".org" is a nonprofit organization, and ".com" is a commercial site. Outside of the United States, the extension usually indicates the country. For instance, ".uk" is the United Kingdom and ".za" is South Africa. Most of the country extensions are fairly easy to figure out. For those that aren't, the *International Security Network* provides a full list.

Web Browser. A software program to access web sites. Netscape is the most popular; Mosaic is also widely used. The commercial online service providers such as America Online, Compuserve, and Prodigy have developed their own web browsers. Most browsers look similar and are easy to use without training or tutorials.

World-Wide Web (also "WWW" or "the web"). The fastest growing element of the Internet. Offers graphics, easy

connections to related sites ("links"), and, increasingly, video and audio.

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