



International Civil Aviation Organization

ATN Seminar and Third ATN Transition Task Force Meeting

Singapore, 26-30 March 2001

Agenda Item 6: Review status of implementation of AFTN circuit and evaluate circuit capacity

AFTN CIRCUIT LOADING STATISTICS

Summary

This information paper shows some aspects of the modernization of communication channels between AFTN centers of Russian Federation and AFTN centers of Asia and Pacific ICAO Region.

(Presented by Russian Federation)

1. Introduction

In given paper is present information on current situation concerning interaction modernization between AFTN centers of Russia and Asia and Pacific ICAO Region and shows AFTN circuit loading statistics (Khabarovsk - Tokyo, Khabarovsk - Beijing and Moscow - Tokyo AFTN circuits).

2. Discussion

For the reason solution a problem of modernization of interaction between Russian aeronautical communication network and AFTN centers of Asia and Pacific ICAO Region, was completed the work on data transmission channel Khabarovsk - Beijing organization and on the February 2001 this AFTN circuit was put into operation.

The message exchange on this circuit between centers of Khabarovsk and Beijing is fulfilled in accordance with ICAO Recommendation for AFTN network at the data transmission speed of 2400 bps with using of satellite digital data transmission channel.

Now for the AFTN traffic exchange between Russian aeronautical communication network and AFTN centers of Asia and Pacific ICAO Region are used three circuit - Khabarovsk - Tokyo, Khabarovsk - Beijing and Moscow - Tokyo.

Some of data exchange parameter of these circuits shows at the next table.

Data exchange parameter	Khabarovsk - Tokyo,	Khabarovsk - Beijing	Moscow - Tokyo
Type of protocol	AFTN	AFTN	AFTN
Character set	IA-5	IA-5	IA-5
Parity check	Y	Y	Y
Character length (bit)	11	11	11
Data transmission rate	2400	2400	200

3. Khabarovsk - Tokyo, Khabarovsk - Beijing and Moscow - Tokyo circuits loading statistics based on three days of traffic (14, 15 and 16 February 2001).

3.1. Khabarovsk - Tokyo circuit

Character count												
	14 February 2001				15 February 2001				16 February 2001			
Time	Rx Char	Tx Char	Rx %	Tx %	Rx Char	Tx Char	Rx %	Tx %	Rx Char	Tx Char	Rx %	Tx %
00-01	49426	4211	6,29	0,54	19908	3365	2,53	0,43	24744	3204	3,15	0,41
01-02	10135	4559	1,29	0,58	7781	3063	0,99	0,39	10810	5713	1,38	0,73
02-03	14996	1978	1,91	0,25	11024	4135	1,40	0,53	14756	3955	1,88	0,50
03-04	13590	3586	1,73	0,46	8502	3116	1,08	0,40	7451	4227	0,95	0,54
04-05	9147	4664	1,16	0,59	5169	4205	0,66	0,54	9564	4235	1,22	0,54
05-06	15968	5282	2,03	0,67	17688	8692	2,25	1,11	11575	4789	1,47	0,61
06-07	10612	10179	1,35	1,30	13975	3067	1,78	0,39	15223	10139	1,94	1,29
07-08	8111	2996	1,03	0,38	10358	850	1,32	0,11	11593	1288	1,48	0,16
08-09	7240	2116	0,92	0,27	8080	2466	1,03	0,31	7653	4131	0,97	0,53
09-10	8875	3835	1,13	0,49	11997	2069	1,53	0,26	7447	1462	0,95	0,19
10-11	6146	4179	0,78	0,53	11472	3104	1,46	0,40	10632	3527	1,35	0,45
11-12	11330	1995	1,44	0,25	16613	2811	2,12	0,36	11207	2618	1,43	0,33
12-13	12988	7752	1,65	0,99	8324	8628	1,06	1,10	11674	8870	1,49	1,13
13-14	15820	987	2,01	0,13	17313	1603	2,20	0,20	12206	1660	1,55	0,21
14-15	6280	1030	0,80	0,13	7488	1708	0,95	0,22	8600	4067	1,09	0,52

15-16	10688	1143	1,36	0,15	16630	2905	2,12	0,37	9577	2070	1,22	0,26
16-17	20355	3508	2,59	0,45	13283	3509	1,69	0,45	13340	3397	1,70	0,43
17-18	25758	1795	3,28	0,23	13236	4182	1,69	0,53	14319	2056	1,82	0,26
18-19	14261	1516	1,82	0,19	15764	2297	2,01	0,29	19591	1389	2,49	0,18
19-20	9558	1327	1,22	0,17	12624	2550	1,61	0,32	16480	2100	2,10	0,27
20-21	7392	2223	0,94	0,28	8829	2904	1,12	0,37	9604	7799	1,22	0,99
21-22	13812	3632	1,76	0,46	9385	3195	1,19	0,41	12883	2650	1,64	0,34
22-23	7890	8706	1,00	1,11	11717	6010	1,49	0,77	10191	8681	1,30	1,11
23-24	15283	9304	1,95	1,18	29556	13822	3,76	1,76	25021	17337	3,19	2,21
Max	49426	10179			29556	13822			25021	17337		

3.2. Khabarovsk - Beijing circuit.

Character count												
	14 February 2001				15 February 2001				16 February 2001			
Time	Rx Char	Tx Char	Rx %	Tx %	Rx Char	Tx Char	Rx %	Tx %	Rx Char	Tx Char	Rx %	Tx %
00-01	24327	3798	3,10	0,48	7439	3600	0,95	0,46	22702	2925	2,89	0,37
01-02	8125	1826	1,03	0,23	17012	1624	2,17	0,21	13746	2614	1,75	0,33
02-03	8011	3673	1,02	0,47	14277	3007	1,82	0,38	10710	2476	1,36	0,32
03-04	12398	1776	1,58	0,23	15580	1015	1,98	0,13	7850	1894	1,00	0,24
04-05	7105	1744	0,90	0,22	6457	2002	0,82	0,25	7983	1971	1,02	0,25
05-06	8666	4316	1,10	0,55	12876	2193	1,64	0,28	7564	2385	0,96	0,30
06-07	12034	3630	1,53	0,46	8577	913	1,09	0,12	11125	2243	1,42	0,29
07-08	5813	2418	0,74	0,31	5855	430	0,75	0,05	7793	1082	0,99	0,14
08-09	12428	1733	1,58	0,22	7623	858	0,97	0,11	6710	1140	0,85	0,15
09-10	5630	3449	0,72	0,44	4930	862	0,63	0,11	7198	630	0,92	0,08
10-11	5740	3679	0,73	0,47	4709	1003	0,60	0,13	8054	1478	1,03	0,19
11-12	8032	1164	1,02	0,15	7554	726	0,96	0,09	10095	788	1,29	0,10
12-13	5569	840	0,71	0,11	4773	1899	0,61	0,24	4604	962	0,59	0,12
13-14	3424	401	0,44	0,05	3975	1571	0,51	0,20	4686	1744	0,60	0,22
14-15	6501	682	0,83	0,09	8738	981	1,11	0,12	6498	3128	0,83	0,40
15-16	4898	489	0,62	0,06	3284	2849	0,42	0,36	5855	1135	0,75	0,14
16-17	2563	2052	0,33	0,26	2333	1666	0,30	0,21	3398	1427	0,43	0,18

17-18	7611	1056	0,97	0,13	5641	2729	0,72	0,35	2751	929	0,35	0,12
18-19	2658	670	0,34	0,09	4646	2161	0,59	0,28	2122	944	0,27	0,12
19-20	6457	725	0,82	0,09	1704	906	0,22	0,12	1801	898	0,23	0,11
20-21	4348	721	0,55	0,09	3125	1549	0,40	0,20	2842	437	0,36	0,06
21-22	1829	769	0,23	0,10	4295	3757	0,55	0,48	7185	2863	0,91	0,36
22-23	7990	2714	1,02	0,35	6934	4976	0,88	0,63	9101	5117	1,16	0,65
23-24	10350	4411	1,32	0,56	8500	3161	1,08	0,40	25273	18594	3,22	2,37
Max	24327	4411			17012	4976	2,17	0,63	25273	18594		

3.3. Moscow - Tokyo circuit.

Character Count												
	14 February 2001				15 February 2001				16 February 2001			
Time	Rx Char	Tx Char	Rx %	Tx %	Rx Char	Tx Char	Rx %	Tx %	Rx Char	Tx Char	Rx %	Tx %
00-01	34832	1608	53,22	2,46	33659	2258	51,42	3,45	26961	1576	41,19	2,41
01-02	16490	1938	25,19	2,96	25329	8601	38,70	13,14	28193	3021	43,07	4,62
02-03	17367	3763	26,53	5,75	20282	3108	30,99	4,75	23617	2733	36,08	4,18
03-04	13969	2632	21,34	4,02	17263	1936	26,37	2,96	13202	4058	20,17	6,20
04-05	16285	9797	24,88	14,97	15552	7631	23,76	11,66	13938	7385	21,29	11,28
05-06	18699	3326	28,57	5,08	14069	2978	21,49	4,55	20516	5854	31,34	8,94
06-07	17640	7749	26,95	11,84	20209	7943	30,87	12,14	31332	9322	47,87	14,24
07-08	9373	9059	14,32	13,84	23235	8977	35,50	13,71	14167	13422	21,64	20,51
08-09	14373	8782	21,96	13,42	20072	28014	30,67	42,80	18393	12367	28,10	18,89
09-10	19230	8246	29,38	12,60	21035	3130	32,14	4,78	16976	9648	25,94	14,74
10-11	24461	11590	37,37	17,71	23567	9582	36,01	14,64	11522	7407	17,60	11,32
11-12	19053	8801	29,11	13,45	34513	3461	52,73	5,29	31502	11113	48,13	16,98
12-13	30984	9581	47,34	14,64	28522	5433	43,58	8,30	30804	4837	47,06	7,39
13-14	16075	11443	24,56	17,48	28509	4544	43,56	6,94	27118	7170	41,43	10,95
14-15	36100	6767	55,15	10,34	25111	51730	38,36	79,03	22129	9611	33,81	14,68
15-16	30560	6371	46,69	9,73	19807	46636	30,26	71,25	30028	9827	45,88	15,01
16-17	26329	6490	40,22	9,92	14480	41760	22,12	63,80	32204	6913	49,20	10,56
17-18	21875	3630	33,42	5,55	19928	4020	30,45	6,14	26741	3867	40,85	5,91
18-19	19601	4063	29,95	6,21	13208	3236	20,18	4,94	26206	5960	40,04	9,11

19-20	18700	4809	28,57	7,35	13194	6689	20,16	10,22	10598	3867	16,19	5,91
20-21	15129	7273	23,11	11,11	15366	4694	23,48	7,17	16233	4153	24,80	6,34
21-22	10777	3111	16,46	4,75	18651	1781	28,49	2,72	19803	3602	30,25	5,50
22-23	22401	3044	34,22	4,65	28267	5843	43,19	8,93	27345	3242	41,78	4,95
23-24	18039	3200	27,56	4,89	20796	1302	31,77	1,99	20061	1803	30,65	2,75
Max	36100	11590			34513	51730			32204	13422		

4. Actions of Meeting

The meeting is expected to notice information presented in this working paper.