

## NO. 12 送信機の冗長系と信頼性

1960年以降送信機の信頼性の向上により運用費節減のため先進国に於ては、送信所の無人化が進められている。

一方半導体および関連機器の発達により放送機器制御のデジタル化、自動化、遠隔制御化が容易にできるようになった。

送信機器の故障時間を可能な限り短くするため、2台の送信機の並列運転方式および現用/予備の2台の切替方式が最も多く用いられている。

今日では送信機の事故に対し予備機を備えることが常識となっている。

別紙に数々の送信機の冗長システムと代表的な予備機システムについて示す。

Fig. 1 テレビ送信機における代表的な予備機システムの比較

Fig. 2 FM送信機における代表的な予備機システムの比較

Fig. 3 は並列ユニット使用時の故障時に合成出力の減少を示すもので、出力におよぼす影響が割合にすくないことを示している。これは並列使用によるメリットである。

最近の出力増巾器は多くのユニット増巾器を並列にして大出力を得る方式がしばしばとられるようになった。この場合各ユニットの電源が各々別個となっているため例えば1つのユニットが故障しても停波なしに若干の出力低下で放送を継続出来る。

図中 [A]は並列ユニットの1ヶが振巾が半分(-6dB)となると合成振巾の減少は

$$4 \text{ユニットの時} \quad A[\text{dB}] = 20 \log \frac{3+0.5}{4} = 1.158 \text{dB}$$

$$2 \text{ユニットの時} \quad A[\text{dB}] = 20 \log \frac{1+0.5}{2} = 2.5 \text{dB}$$

[B]は並列ユニットの1ヶが位相が例えば60°ずれると合成振巾の減少は

$$4 \text{ユニットの時} \quad B[\text{dB}] = 20 \log \frac{\sqrt{(4-1)^2 + 1 + 2(4-1) \cos 60^\circ}}{4} = 0.90 \text{dB}$$

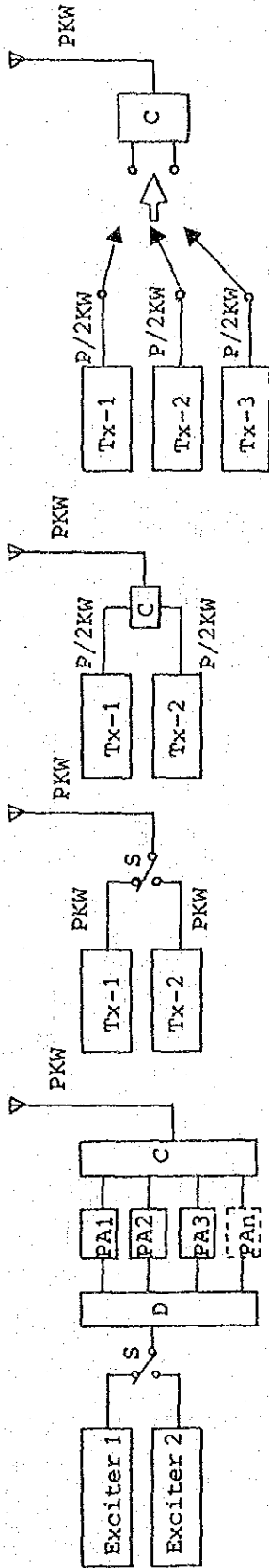
[P]は並列ユニットの1ヶ(又は複数)が不良の時出力の減少は

$$4 \text{ユニットの時} \quad P = P_0 \left( \frac{4-1}{4} \right)^2 = 0.56$$

通常10KWの出力の場合5.6KWに減少する。

Comparison of Standby System (TV Transmitter)

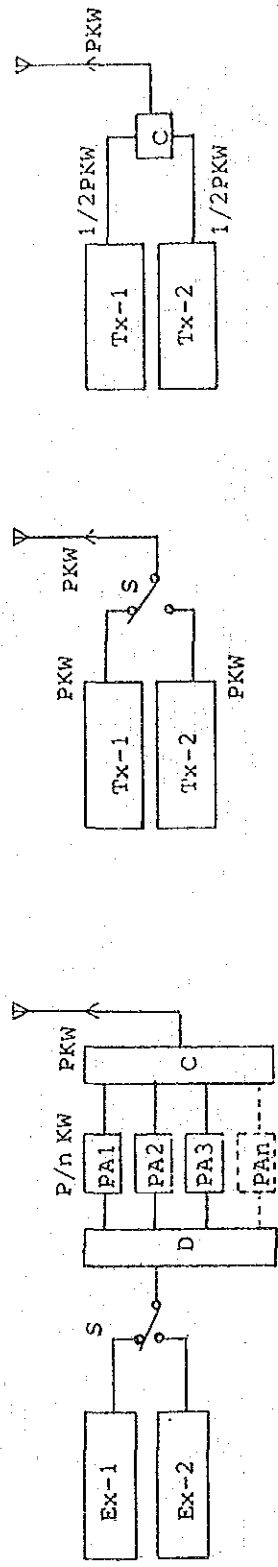
Fig.1



Construction (System)	Younger stage: 2-TX Switching Final stage: Parallel of power amplifiers	2-TX Switching system	2 parallel system	2 parallel 1 standby system
Application	• Mostly used for Translator station (For 100W - 1KW)	• Used for 100W - 1KW • Some time more than 10KW	• Used for 10KW or more	• Key station • Big power station (20KW or more)
Reliability MTBF (Times)*	2.2	2.2	1.55	3.3
Remarks	S : Switch D : Distributor C : Combiner *MTBF of single Tx take as 1 • Exciter stage output power about 50 mW (Synch peak) • PA1 : Power Amplifier } (Many parallel PA) Pan (units system)	• Very popular and simple system for standby • When the existing TX failed, automatically switch over to standby • Maintenance of the failure is easy even in servicing time	• Popular and simple system for standby • When one Tx failed, power is to decrease 1/4	• Usually 2 parallel operation when one of them out of order, automatically switch over to the standby, therefore 3 combinations are obtained (Tx-1 - Tx-2, Tx-2 - Tx-3, Tx-3 - Tx-1) • Automatic control circuit for those combinations are complicated

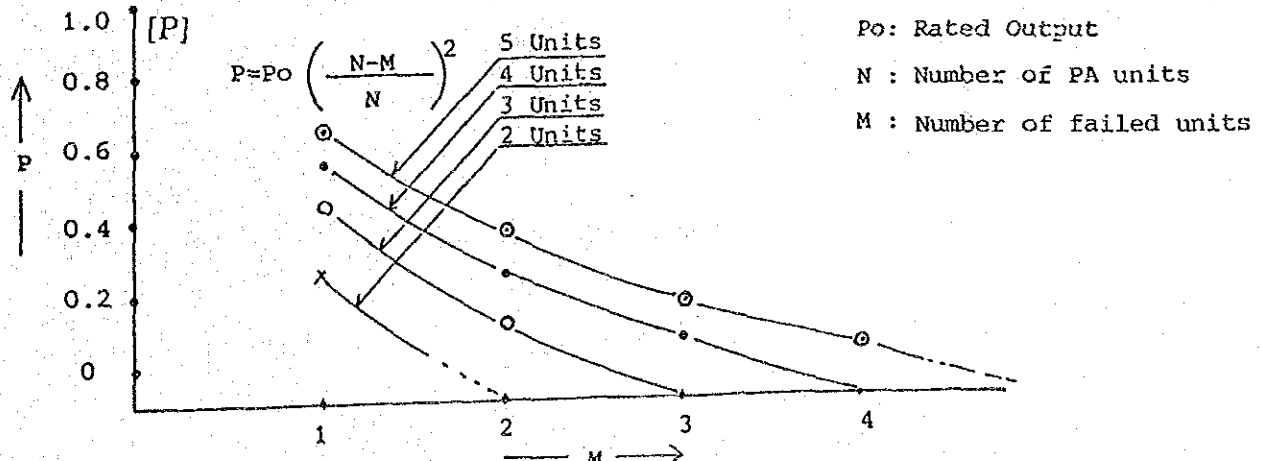
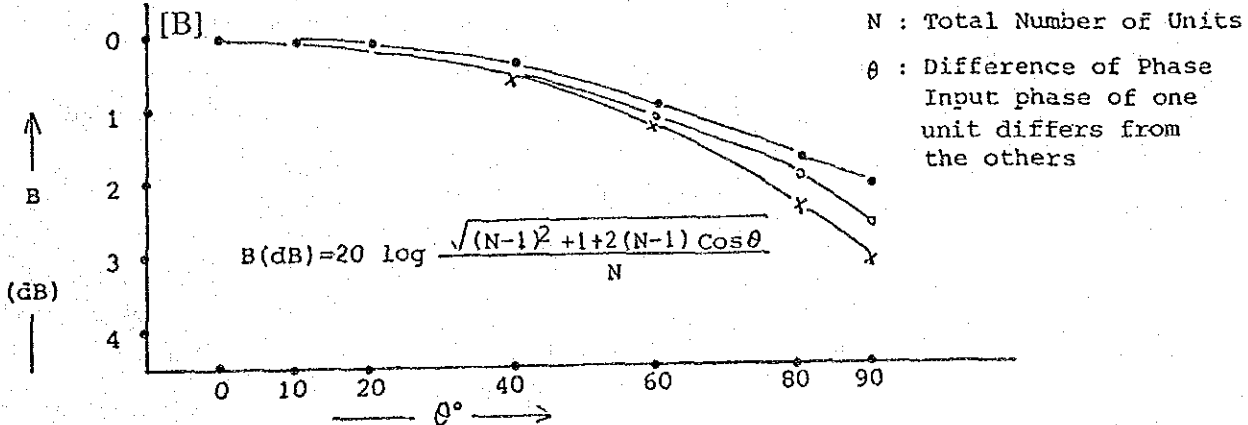
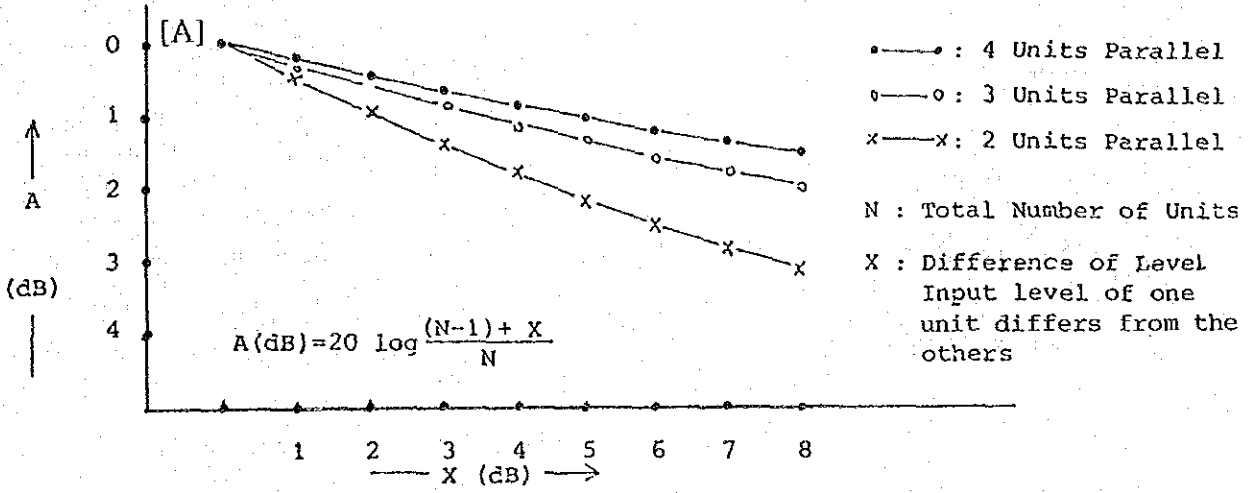
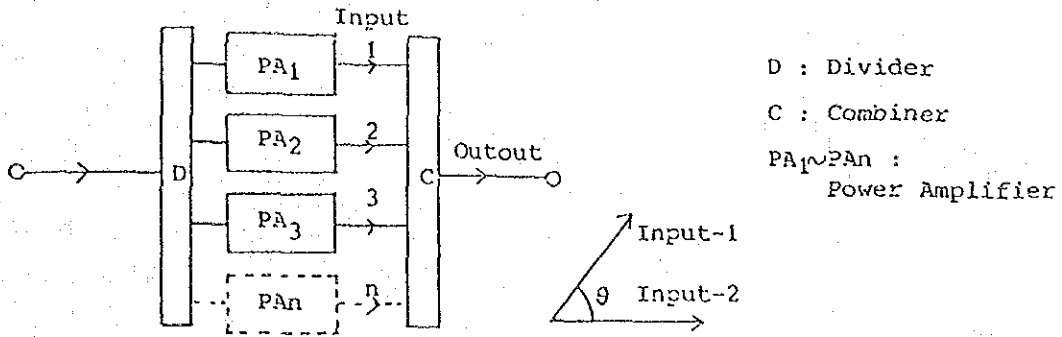
Fig. 2

Comparison of Standby System (FM Transmitter)



Construction (System)	Exciter: 2-EX Switching Final stage: Parallel PA units	2 parallel	
Application	100W - 5KW	10KW or more	
Reliability (MTBF)*	2.2	2.2	1.55
Remarks	Ex-1, Ex-2 : Exciter (Output power=50mW) D : Distributor C : Combiner PA1-PA <sub>n</sub> : Power Amplifier S : Switch * MTBF of single Tx take as I	<ul style="list-style-type: none"> <li>• Popular and simple system for the standby</li> <li>• When one TX failed, power is to decrease 1/4</li> </ul>	<ul style="list-style-type: none"> <li>• Very popular and simple system for the standby</li> <li>• Maintenance of the failure is easy even in servicing time</li> </ul>

Parallel Operation of Power Amplifiers Fig.3



Maintenance Plan of Transmitting Facilities

1. Daily Maintenance:

- (1) Metering of operating Transmitter
- (2) Patrol  
Patrol transmitter room and note the abnormal phenomenon which feel our 5 Senses, such as Smell, Noise, Flash, Vibration, Temperature, etc.

2. Weekly Maintenance:

- (1) Cleaning Transmitter & related Equipment
- (2) Patrol Engine-Generator Room and clean the Equipment
- (3) Operating condition of Obstruction Light on the Antenna Mast

3. Monthly Maintenance:

- (1) Confirm the Transmitters Output Power (Visual and Aural transmitters respectively by use dummy Load).
- (2) Confirm the Visual Transmitter Band characteristics by use AM Sideband Analyzer.
- (3) Test Operation Engine-Generator (Operate about 30"), Automatic Start/Stop Test, etc.
- (4) Check all parts of Transmitters
  - a) Burnt parts
  - b) Leakage of Oil or Electrolyte of Capacitor
  - c) Loose Bolts & Nuts
  - d) Poor Contact of Switch or Module
  - e) Bearing of Blower Motor
  - f) Air Filter of cooling air Inlet (once/3 months)

4. Yearly Maintenance:

- (1) Measurement of the characteristics of TV Tx (once/year)
  - a) Visual Tx
    - Frequency Response
    - Output Power

- Carrier Frequency, Intermediate Frequency
- Variation of Output Power
- Differential Gain
- Differential Phase
- Spurious Radiation
- Confirmation of Service Area (Check of Field Strength)

b) Aural Tx

- Frequency Response
- Output Power
- Carrier Frequency, Intermediate Frequency
- S/N (Signal to Noise Ratio)
- Distortion Factor
- Spurious Radiation
- Confirmation of Service Area (Check of Field Strength)

Result of the measured values are necessary to satisfy the CCIR standard.

(2) Test Operation of Spare Parts — such as all kind of Modules, etc.

(3) Transmitting Antenna

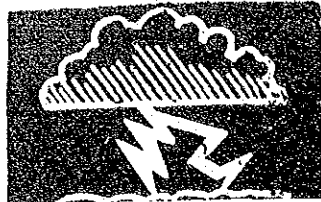
a) Appearance of Iron Mast and Antenna Elements (Rust, Loose Bolt & Nut, Guy Wires, Anchor Bolt & Nut, Anchor Blocks, Crack on the surface of Main Feeder, etc.) (once/year)

b) Measurement of Characteristics (once/year) (Measured from Channel Combiner Output)

- DC Resistance
- VSWR

c) Leakage of compressed Air in Main Feeder (once/year)

d) Painting of Iron Mast (once/4 years)



## Lightning toll 31

SEVEN people, six from the same family, were struck and killed by lightning which also set on fire the hut in which they were seated on Wednesday evening, bringing the seasonal toll to 31 so far. The incident occurred at Khahli village, Ntabazinduna area, in Bembesi.

The dead have been identified as Tommy (54), Ivy (18), Pretty (13), Sophie (12), Sithabile (10) and Thembelani (8), all from the Tshuma family and Violet Ncube (49). All were from Khahli village. — Herald Reporter.

Nov 18th , 1989

## Lightning toll 35

A MOTHER and her son were killed on Friday night by lightning, bringing the reported death toll to 35 this season. Teclar Saunyama (35) and her son, John (15), both from Saunyama communal lands, were struck and killed by lightning while seated in a hut which later burnt their bodies beyond recognition. Four people in the hut escaped unhurt.

By Sunday, the toll from lightning had risen to 33 and not 31 as was reported yesterday. — Herald Reporter.

Nov 21st, 1989

年間約200人以上の犠牲者が出ている

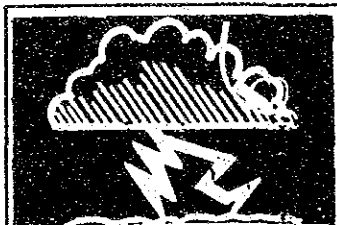


## Lightning toll 37

Herald Reporter  
TWO more people have been struck by lightning bringing to 37 the number of reported cases.

Police last night reported the death of Aggie Mufudzi (19), and Mercy Mapfume (7), both of Oasis Farm in Featherstone who were struck and killed by lightning while sleeping in a hut last Saturday morning.

Nov 22nd , 1989



## Toll 40

THREE more people have died after being struck by lightning, bringing the reported toll to 40. Nyasha Mangere (19) of Murare resettlement scheme was struck and killed on Monday while seeking shelter in a maize field.

In Gutu, an elderly couple were struck and killed while sheltering in their kitchen hut. Two of their children who were with them in the hut survived. The incident occurred at Nema-konde village in Chief Makore's area. — Ziana.

Dec 1st , 1989

## Lightning toll 43

LIGHTNING claimed its 43rd victim in Mwenezi when Gumiri Ndlele was struck and killed while walking in the rain recently. The incident occurred at Mafuzhi village.

In another related incident, Munyamali Hove of John village, Chief Mapiravana, sustained burns when the hut in which he was sheltering was struck by lightning on Saturday afternoon. — Herald Reporter.

Dec 5th , 1989

NO. 15 ZBC におけるテレビ周波数計画

局名	現状の周波数 (1989年現在)				将来の周波数計画						
	TV	CH	映像 搬送波 (MHz)	音声 搬送波 (MHz)	CH	オフ セット	送信機 または 中継機	偏波	映像 搬送波 (MHz)	音声 搬送波 (MHz)	鉄塔 高 (m)
Harare	1	5	175.25	180.75	5	20P	TX	H	175.276042	180.776042	155
	2	8	196.25	201.75	8	0	TX	H	199.250000	204.750000	◇
M'shanga	1	11	217.25	222.75	11	20M	TR-5 20P	H	223.223958	228.723958	155
	2	14	238.25	243.75	14	20M	TR-8	H	247.403958	252.903958	◇
Karoi	1	9	203.25	208.75	9	20M	TX	V	207.223958	212.723958	155
Kariba	1	5	175.25	180.75	5	0	TX	H	175.250000	180.750000	60
Kadoma	1	6	182.25	187.75	6	20P	TX	H	183.276042	188.776042	110
	2	9	203.25	208.75	9	0	TX	H	207.250000	212.750000	◇
Gokwe	1	7	189.25	194.75	7	20P	TR-6 20P	V	191.276042	196.776042	155
	2	10	210.25	215.75	10	0	TR-9	V	215.250000	220.750000	◇
Chivhu	1	12	224.25	208.75	12	20M	TR-5 20P	H	231.223958	236.723958	155
G. Fowl	1	11	217.25	222.75	11	0	TX	H	223.250000	228.750000	130
	2	14	238.25	243.75	14	0	TX	H	247.430000	252.930000	◇
G. Livet	1	7	189.25	194.75	7	0	TR-11	H	191.250000	196.750000	90
	2	10	210.25	215.75	10	20P	TR-14	H	215.276042	220.776042	◇
Rutenga	1	11	217.25	222.75	11	20M	TR-7	V	223.223958	228.723958	155
B. Bridge	1	14	238.25	243.75	14	20M	TR-11 20M	V	247.403958	252.903958	60
Mutare	1	6	182.25	187.75	6	20M	TX	V	183.223958	188.723958	60
	2	14	238.25	243.75	14	20P	TX	V	247.456042	252.956042	60
Rukotso	2	7	189.25	194.75	7	20M	TR-14 20P	V	191.223958	196.723958	155
	1	10	210.25	215.75	10	20M	TR-6 20M	V	215.223958	220.723958	◇
Gwendingwe	2	8	196.25	201.75	8	20M	TR-14 20P	H	199.223958	204.723958	90
	1	11	217.25	222.75	11	20P	TR-6 20M	H	223.276042	228.776042	◇
Bulawayo	1	6	182.25	187.75	6	0	TX	V	183.250000	188.750000	155
	2	9	203.25	208.75	9	20P	TX	V	207.276042	212.776042	◇
Matopos	1	11	217.25	222.75	11	0	TR-6	H	223.250000	228.750000	30
Gwanda	1	5	175.25	180.75	5	0	TR-11	H	175.250000	180.750000	161
	2	8	196.25	201.75	8	20P		H	199.276042	204.776042	◇
Kenmaur	1	12	224.25	229.75	12	20P	TX	V	231.276042	236.776042	155
Kamativi	1	5	175.25	180.75	5	20P	TX	V	175.276042	180.776042	161
	2	8	196.25	201.75	8	0	TX	V	199.250000	204.750000	◇
Vic. Falls	1	7	189.25	194.75	7	20M	TR-5 20P	H	191.223958	196.723958	90
	2	10	210.25	215.75	10	20P	TR-8	H	215.276042	220.776042	◇
Chiredzi	1	5	175.25	180.75	5	20M	TR-11 20P	V	175.223958	180.723958	155
Mt. Darwin	1	6	182.25	187.75	6	0	TR-11 20M	V	183.250000	188.750000	155

【備考】 現状の周波数: 西ヨーロッパチャンネル  
方式(Band-III)  
カラー方式: PAL-B  
TV1: 総合プログラム  
TV2: 教育プログラム  
ハラレ局のみで放送  
(1989年現在)

20P: オフセット周波数20kHz (プラス)  
20M: オフセット周波数20kHz (マイナス)  
0: オフセットなし  
H: 偏波(水平)  
V: 偏波(垂直)  
カラー方式: PAL  
TV方式:



# The Herald

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## Import allowance relaxed to \$5 000 for cars and goods

**Business Editor**  
THE maximum value of goods that can be brought into Zimbabwe without an import licence was yesterday increased tenfold, from \$500 to \$5 000, as the Government took the next step towards trade liberalisation.

The ban on using holiday allowances for typewriters, computers, facsimile machines and other office equipment has been lifted and the ban on using holiday allowances for cars partially lifted. But only newish models of a very few types can be brought in under the open general import licence.

Goods brought in without an import licence need only be kept for one year now, instead of the previous two years.

### Gazetted

The \$5 000 maximum can only be used by any particular person once every 30 days, according to the Control of Goods (Open General Import Licence) (Amendment) Notice 1989 (No 8) gazetted yesterday by the Minister of Trade and Commerce.

And no one can combine his \$5 000 maximum with anyone else to bring in a vehicle worth \$10 000, say, on an open general import licence.

Previously, families returning from a holiday could aggregate the \$500 allowances of the husband and wife to bring in a single item worth no more than \$900, with the rest of the allowance spread over smaller items all worth \$500 or less.

To stop people using the latest concession to waste foreign exchange by bringing in old and unroadworthy cars needing expensive spares, or rare cars by Zimbabwean standards for which there were no spares available, limits have been put on the lifting of the car ban.

### Manufacture

No car imported under an open general import licence can be more than four years old from the date of manufacture.

Such a vehicle must be a Mazda 323 hatchback or sedan, Mazda 626 sedan or station wagon, a Mazda 929 Executive, a Peugeot 504 sedan, station wagon or pick-up, and the Nissan Sunny HB sedan or station wagon.

All of these vehicles

can have petrol or diesel engines. Also on the list are the Mazda F1300 and B1600 petrol pick-ups and the B2200 diesel pick-up, plus the Nissan PG 720 petrol and AG720 diesel pick-ups and four-wheel-drive Land-Rovers and Toyota Land Cruisers with petrol or diesel engines.

Most of the vehicles are, have been, or will be assembled in Zimbabwe or form part of large fleets on the roads.

The Mazda 929 is the only luxury car and so far uncommon but back-up will be available following the deal with Mazda and Willowvale Motor Industries.

Because few vehicles less than four years' old cost the equivalent of \$5 000, this means that few people — even if they have the money — will be able to bring in cars without an import licence.

### Television

But the new regulations gazetted yesterday will make it easier for individuals to bring in items such as colour television sets, videos, typewriters, computers and photocopiers — provided that they are to be used by that individual and not

resold for at least 12 months.

The regulations have also been amended so that farmers and motorists, for example, can bring in spares to the value of \$5 000 for use in their own vehicles without an import licence.

None of these concessions apply to companies.

Airline crews and truck or train drivers making frequent trips in and out of the country will not benefit from this concession and will still be limited to goods worth \$50 on each trip.

Observers said yesterday that the move could be seen as an "experiment in the gradual opening up of the economy under the planned liberalisation programme — but it will not help ordinary people get cars".

Instead, it would help cut back on the red tape and official time spent on processing items most commonly imported by Zimbabweans with their limited holiday allowances.

With only the first \$200 still duty-free, the move could also increase customs revenues if it prompts more people to

import goods.

It could also act as an incentive for people with money outside the country to bring that money back in the form of goods — and with a reduced load of paperwork in the Ministry of Trade and Commerce, the processing of no-currency involved import licences could be speeded up.

Observers said that the Government's next step, possibly early next year, could be to make more foreign exchange available to the productive sectors and then allow them to import more raw materials and essential equipment under OGIL.

Such a move will, however, require foreign financing and will have to be accompanied by an overall adjustment programme, which is now expected to be in place next year.

NO. 17 ZBCの財政(1988)

ZIMBABWE BROADCASTING CORPORATION

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED  
30 JUNE 1988

	Notes	1988 \$	1987 \$
<b>INCOME</b>			
Licence revenue		6 517 371	6 122 841
Gross	6 783 865	6 377 533	
Less Post Office collection charges	<u>266 494</u>	<u>254 692</u>	
Commercial Service revenue		10 699 785	9 354 150
Gross	12 506 420	10 939 130	
Less Agents' commission	<u>1 806 635</u>	<u>1 584 980</u>	
Production revenue		793 356	648 782
Investment revenue		1 575 053	843 506
- long-term investments	109 772	20 121	
- interest	<u>1 465 281</u>	<u>823 385</u>	
Sundry		398 061	241 538
		<u>19 983 626</u>	<u>17 210 817</u>
<b>EXPENDITURE</b>	1	20 688 665	18 438 519
Programme	6 591 945	6 109 741	
Engineering and technical	2 715 784	2 409 134	
Administration, general overheads and security	4 165 214	4 182 868	
Property rent and maintenance	168 150	117 308	
Finance costs	2 434 055	2 093 633	
- exchange losses	<u>772 535</u>	<u>756 812</u>	
- interest	<u>1 661 520</u>	<u>1 336 821</u>	
Provision for contingencies	1 975 721	1 284 249	
Depreciation	2 637 796	2 241 586	
- immovable property	<u>547 499</u>	<u>313 004</u>	
- equipment	<u>1 828 935</u>	<u>1 771 402</u>	
- furniture and office equipment	31 693	25 907	
- motor vehicles	<u>229 669</u>	<u>131 273</u>	
<b>EXCESS OF EXPENDITURE OVER INCOME TRANSFERRED TO GENERAL FUND</b>	3	<u>705 039</u>	<u>1 227 702</u>

ZIMBABWE BROADCASTING CORPORATION  
BALANCE SHEET - 30 JUNE 1988

	Notes	1988 \$	1987 \$
<b>FUNDS EMPLOYED</b>			
CAPITAL RESERVE	2	6 272 962	3 082 200
GENERAL FUND	3	10 219 317	6 477 215
FUNDS OF THE CORPORATION		16 492 279	9 559 415
LOANS	4	19 705 150	20 324 378
PROVISION FOR CONTINGENCIES	5	5 113 102	2 571 599
		<u>41 310 531</u>	<u>32 455 392</u>
<b>EMPLOYMENT OF FUNDS</b>			
FIXED ASSETS	6	27 645 217	22 679 639
LONG-TERM INVESTMENTS	7	1 827 895	921 067
MEDIUM-TERM INVESTMENTS		5 200 000	6 000 000
<b>CURRENT ASSETS</b>			
Stores	8	4 213 436	3 168 453
Debtors	9	4 699 894	3 073 283
Investments		6 500 000	2 250 000
Cash resources		59 497	59 287
		<u>15 472 827</u>	<u>8 551 023</u>
<b>CURRENT LIABILITIES</b>			
Creditors	10	8 835 408	5 696 337
NET CURRENT ASSETS		<u>6 637 419</u>	<u>2 854 686</u>
		<u>41 310 531</u>	<u>32 455 392</u>

W J KAMBA

Chairman

T J KANGAI

Director  
General

13 June 1989

NO. 18 テレビ送信設備用測定器保有状況(ハラレ局)

測定器名	台数	保有状況
1. VHF電測器	1	大形(車で運搬). 旧式. 修理中
2. ビデオスコープ	1	送信機のBand特性点検用. 旧式. 修理中
3. オシロスコープ	1	波形監視用. 0~50 MHz. 使用可
〃	2	〃    大形. 旧式. 修理中
4. 電力計	1	通過形. 使用可
5. ベクトルスコープ	1	カラー特性測定用.    修理中
6. 発振器	1	VHF帯ラストオシレーター. 使用可
〃	1	VHF帯スイープオシレーター. 修理中
7. 周波数	1	VHF帯周波数測定用. 修理中
8. TV波形信号発生器	1	特性測定のための各種波形信号発生器. 修理中
9. 音声特性測定器	1	音声の諸特性測定用. 使用可能
10. 電圧計	1	AC. 50Hz. 準精密形. 使用可
11. 電流計	1	AC. 50Hz. 準精密形. 使用可
12. 回路試験器	3	テスター. 電圧、電流、抵抗等測定. 使用可能
13. 可変抵抗器	2	映像、音声用.

## NO.19 国家開発5ヵ年計画における「マスコミュニケーションおよび情報提供手段の開発」の内容

マスメディアおよび情報に関し国家開発5ヵ年計画(1986~1990)内での開発計画の内容

- [目的]
1. 新しい社会秩序を促進するための情報の組織、伝達について再度方向付けを行う。
  2. 情報が最も遠隔地に迄伝達するため情報の諸機関を強化、拡張することにより公正なる目標を達成することに貢献する。

### [開発計画]

上記目的達成のため下記計画を行う。

#### (a) 地方への情報サービス

地方へのサービスは自動車(移動)による映画、映画製作装置、テレビジョン、VTR、地方新聞、地方通信センター(growth point)など色々のメディアで行う。

此の計画は、地方の住民の教育を目標としており、多くの住民に独立独行のための知識や経験を与えることである。

#### (b) 新聞および通信

地方の開発を実行する上で新聞通信Systemをこの5ヵ年計画の期間で改善する。これは政府広報サービスを改善する長期目標の方向に向かうこととなる。大衆への情報の伝達は政府発行の雑誌、ポスター、ちらしなどにより強化されることとなる。

政府はこの5ヵ年計画の期間の中でジンバブエの正しいイメージを外国につたえるために、外国のメディアに反映されるものをモニターおよび評価することにより政府は必要の場合には、訂正する処置がとれる。このことは地方および外国から得られる情報は意図する結果を得るための情報として、推進され又は分析される必要がある。

政府は情報のサービスを効果的に行うため、研究と文書によるサービスの改善を引続き行う。

表 27 および 27aにセクターの予算の支出計画を示す。

( 政府刊行物 First Five-Year National Development  
Plan 1986-1990 Volum II April.1988 )

TABLE 27  
MASS COMMUNICATION AND INFORMATION: CAPITAL EXPENDITURE  
1986/87-1990/91 (\$'000)

Projects	1986/87	1987/88	1988/89	1989/90	1990/91	Cumulative 1986/87- 1990/91
1. Mobile cinema and film production . . . . .	—	—	370	370	150	890
2. Rural electronic media . . . . .	450	430	320	320	320	1 840
3. Rural newspaper . . . . .	—	—	927	927	927	2 781
4. Government public relation office . . . . .	—	—	41	—	—	41
5. Production of Government literature . . . . .	—	—	20	—	—	20
5. Communication Centre Project . . . . .	—	—	183	183	183	549
7. Foreign Service information . . . . .	—	—	29	29	29	87
8. Research and documentation . . . . .	—	—	166	167	167	500
9. State occasion and specialist service . . . . .	120	114	572	361	360	1 527
<b>TOTAL . . . . .</b>	<b>570</b>	<b>544</b>	<b>2 628</b>	<b>2 357</b>	<b>2 136</b>	<b>8 235</b>

TABLE 27a  
ZBC AND PTC CAPITAL EXPENDITURE, 1986/87-1990/91 (\$'000)

Project	1986/87	1987/88	1988/89 -1990/91	1989/90	1990/91	Cumulative 1986/87- 1990/91
<i>Zimbabwe Broadcasting Corporation (ZBC)</i>						
Land and building . . . . .	700	2 360	—	—	—	—
Equipment . . . . .	4 590	230	—	—	—	—
Transmitters . . . . .	828	130	—	—	—	—
Other . . . . .	675	1 734	—	—	—	—
<b>SUB-TOTAL . . . . .</b>	<b>6 793</b>	<b>4 454</b>	<b>13 753</b>			<b>25 000</b>
<i>Post and Telecommunication (PTC)</i>						
<b>TELECOM SERVICE</b>						
Land and building . . . . .	4 167	8 694	—	—	—	—
Plant . . . . .	—	—	—	—	—	—
Cash purchases . . . . .	19 501	21 438	—	—	—	—
Loans . . . . .	41 189	33 230	—	—	—	—
Capitalised labour and overheads . . . . .	4 100	4 510	—	—	—	—
Capital exch loss . . . . .	6 000	5 400	—	—	—	—
Transport . . . . .	2 166	1 974	—	—	—	—
Housing . . . . .	605	744	—	—	—	—
Office equipment . . . . .	101	191	—	—	—	—
<b>POSTAL SERVICE</b>						
Land and building . . . . .	2 597	2 990	—	—	—	—
Plant . . . . .	193	293	—	—	—	—
Transport . . . . .	91	307	—	—	—	—
Housing . . . . .	793	1 051	—	—	—	—
Office equipment . . . . .	199	275	—	—	—	—
<b>ADMINISTRATION</b>						
Land and building . . . . .	1 799	3 132	—	—	—	—
Stores plant . . . . .	226	149	—	—	—	—
Transport . . . . .	0	495	—	—	—	—
Housing . . . . .	0	0	—	—	—	—
Office equipment . . . . .	2 260	2 417	—	—	—	—
Minor works . . . . .	310	374	—	—	—	—
<b>SUB-TOTAL . . . . .</b>	<b>86 297</b>	<b>87 664</b>	<b>214 039</b>			<b>388 000</b>
Radio equipment system for Ministries . . . . .	—	—	10 000	—	—	10 000
<b>GRAND TOTAL . . . . .</b>	<b>93 090</b>	<b>92 118</b>	<b>237 792</b>			<b>423 000</b>



REPUBLIC OF ZIMBABWE

FIRST FIVE-YEAR  
NATIONAL DEVELOPMENT PLAN  
1986-1990

VOLUME II

APRIL, 1988

(国家開発5カ年計画についての政府発行資料(66頁)の表紙)

## NO. 20 非同盟首脳会議について

### 非同盟諸国首脳会議

Conference of the Head of State or Chief Ministers of the Non-Aligned Nations

【沿革】 正式には非同盟諸国国家元首・政府首脳会議であり、一般的には非同盟諸国会議(Conference of Non-Aligned States)、または中立国首脳会議などと呼ばれている。

【目的】 国政情勢に関する意見交換、国際平和と安全の確保・強化、民族自決、反帝・反闘争、新旧植民地主義反対、内省不干渉、人民差別反対、全面完全軍縮、核実験反対、平和共存、国連重視、経済的発展の不均衡是正などがそのつど議題としてとりあげられる。

【加盟国】 非同盟主義を外交の基調とする諸国の会議であって、その参加資格は、①平和共存・非同盟の原則にたち、②民族解放運動の支持、③軍事ブロックに加わらず、軍事同盟条約に加わらず、自国領土内に外国軍事基地をおかない国であるとされている。89年9月1日～6日ジンバブエの首都ハラレで開かれた第8回首脳会議は政治・経済宣言(ハラレ宣言)と南部アフリカ特別宣言を採択した。

(1989年世界年鑑より  
共同通信社)



NO.21 アフリカ諸国小学校就学率・成人識字率の比較

国名	小学校 就学率(%)	成人識字率 (%)	国名	小学校 就学率(%)	成人識字率 (%)
ガーナ	76	59/37	エジプト	78 (義)	54/22
エチオピア	78	39	ケニア	104 (義)	60/35
モザンビーク	104 (義)	44/12	アルジェリア	81	57/32
ニジェール	23 (義)	14/6	チャド	29	35/8
ナイジェリア	98	46/23	ブリキナファソ	75(義)(無)	15/3
中央アフリカ	54	48/19	コンゴ	93 (義)	70/44
南アフリカ	(義)	68~29	コートジボアール	76	45/24
スーダン	52	38/14	リビア・アラブ		67/30
ウガンダ	60		マリ	27 (義)	14/6
カルメーン	107	55/25	モーリタリア	33	17.4
タンザニア	98	62/31	モロッコ	80 (義)	41/18
ザイール	90(義)(無)	74/37	セネガル	48 (義)	31/14
ザンビア	96	79/58	ソマリア	30(義)(無)	11/3
ジンバブエ	130(義)(無)	77/61			
ボツワナ	84 (義)	61/61			
アンゴラ	24	36/19			
ギニア	33(義)(無)	35/14			
マダガスカル	100	68/55			

識字率： 1983年、男/女 (世界各国要覧 4訂版)  
 就学率： 1986年 1986年 東京書籍  
 (義)： 義務教育  
 (無)： 義務教育費無料

NO. 22 収集リスト一覧

- (1) NATIONAL INCOME AND EXPENDITURE REPORT 1986, 1987, 1988  
(中央統計局)
- (2) THE PROMOTION OF INVESTMENT POLICY AND REGULATIONS 1989  
(大蔵省)
- (3) FIRST FIVE-YEAR NATIONAL DEVELOPMENT PLAN 1986-1990 VOLUME II  
1988  
(ジンバブエ国政府)
- (4) STATISTICAL YEAR BOOK 1987  
(中央統計局)
- (5) THE CENSUS OF PRODUCTION 1985/1986  
(中央統計局)
- (6) BUDGET STATEMENT, 1989 · 1988  
(大蔵省)
- (7) FINANCIAL STATEMENT, 1989 · 1988 · 1987  
(大蔵省)
- (8) INVESTMENT OF REGISTER (Summary) 1988  
(ジンバブエ国政府)
- (9) POPULATION PROJECTIONS OF ZIMBABWE: 1982 TO 2032  
(中央統計局)
- (10) LABOUR & ECONOMY  
(労働・社会福祉省)
- (11) RAINFALL REPORT SEASON 1982-1983  
(気象庁)
- (12) YELLOW PAGES 1989-1990

- (13) AN INTRODUCTION TO THE ECONOMICS OF TRANSFORMATION
- (14) LOOK & LISTEN (TV · RADIO GUIDE)
- (15) ANNUAL ECONOMIC REVIEW OF ZIMBABWE 1986
- (16) GENERAL CERTIFICATE OF EDUCATION 1989
- (17) A CERTIFICATE GEOGRAPHY OF ZIMBABWE
- (18) GEOGRAPHY TODAY  
(Human and Economic)
- (19) OUR ZIMBABWE  
(An Element of Political Economy)
- (20) MAPS



JICA